SIEMENS

Displays

TD

Replacements of Parts

Displays

19” B/W TFT Monitor (DSB 1906 - DC / DC-MN)

Valid for Part No. 086 77 051
Valid for Part No. 086 93 934

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Print No.: TD00-000.841.24.05.02
Replaces: TD00-000.841.24.04.02

English
Doc. Gen. Date: 02.08

Document revision level

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Safety Information

DHHS Regulations (Department of Health and Human Services) skipped (no high voltage).

Assuming a complete replacement, there are no contact points for line power, etc.

NOTE

ARTD-002.732.17.. (Safety-technical Regulations for Installation and Repair) must be observed.

⚠WARNING

Certain components inside the units are under high voltage!

If there is contact with these components, it can cause damage, serious bodily injury or death.

➪ **Do not open the monitor housing; this is not necessary in a service situation.**

⚠WARNING

A damaged power cable can lead to fire or electric shock!

If these components are operated with a damaged power cable, it can cause damage, serious bodily injury or death.

➪ **Use only power cables that are in good condition! When disconnecting the power line, hold the power cable only by the connector.**

⚠WARNING

If objects are inserted into the housing, this can cause electrical shock.

This can cause damage to the unit, to other damage, serious bodily injury or death.

➪ **Do not insert objects into the housing!**

⚠WARNING

When handling connection cables, no contact with the patient may be made.

This can cause damage, serious bodily injury or death of the patient.

➪ **Do not connect the unit in the patient area!**

Monitor Remarks

NOTE

- **There are two versions of the 19” B/W TFT Monitor type DSB 1906-DC:**
  - **Part number 086 77 051**

    Always delivered without a base (for use in the DCS). For the Table application the "existing" base has to be re-installed (even when obtained as a spare part).

    The base can be ordered as a separate spare part, refer to the SPC.
  - **Part number 086 93 934 (DSB 1906-DC-MN)**

    The technology and application are identical to that for Part Number 086 77 051. However, it has additional magnetic shielding for use in a magnetic environment.

Tab. 1 DSB 1906 ... Front

- The DSB 1906-DC (model designation) is a high-resolution 19" B/W TFT monitor (48 cm).
- It is always shipped **without** a console base.
  - Table application:

    A base may be ordered separately.
  - DCS application:

    Installation via "VESA" adapter. The surrounding rubber seal enables installation without gaps, the displays appear as a single monitor.
  - Monitor trolley application:

    Installation via "VESA" adapter, no base, etc., is required.
- OSD (on-screen menu):

  Operation via the front pushbuttons arranged to the right, see Pos. 3.
- Power switch

  As seen from the front, a power switch is available at the back left, see Pos. 1.
- On indicator:

  The "On" status is shown via the Power LED, see Pos. 2.

  Two different levels of brightness may be set for the LED via the OSD menu. The system is "dimmed" when shipped.
- Ambient light sensor:

  An ambient light sensor (brightness adaptation relative to the ambient brightness) is present, see Pos. 4. It can be configured in the OSD menu.

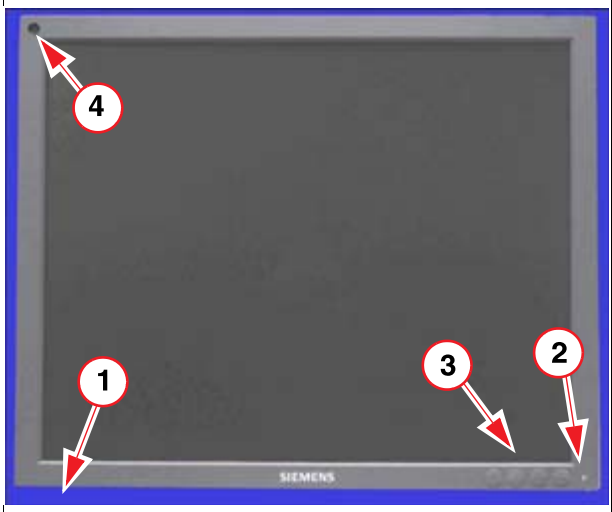
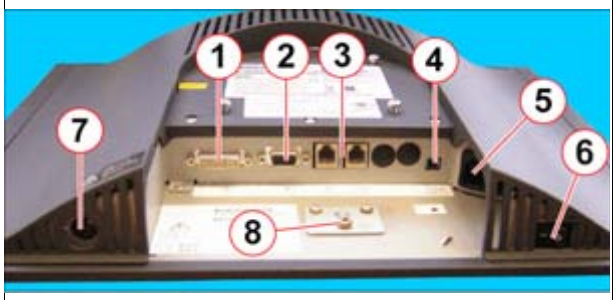


Fig. 1: DSB 1906-DC / DC-MN 19" B/W Monitor

Pos. 1	Power switch (on back)
Pos. 2	Power LED
Pos. 3	OSD buttons
Pos. 4	Ambient light sensor

Tab. 2 DSB 1906 ... Rear

The connector panel is located under the base; in other words, the base must be removed to gain access to the connections. The power switch, Pos. 6, is also accessible through the base. It is located on the left, behind the front panel, as viewed from the front.	 *Fig. 2: Connection panel DSB 19..* Pos. 1 DVI-I Input Pos. 2 VGA Input (D-Sub). Pos. 3 RS232 (service only) Pos. 4 5V/1A output Pos. 5 Power connector Pos. 6 Power switch Pos. 7 Used only with SMFit ACT (currently not used on AX systems) Pos. 8 Ground connection

- A laptop is not required for adjustment. All adjustments can be performed in an "on-screen menu" (OSD), accessible using the pushbuttons (front of frame).
- The TFT monitor can be controlled with BAS (Synch. on green) at the D-Sup input.
- OSD operating menu:
  - In the OSD menu, under < **Others => Status** >, the firmware version as well as the timing that is currently configured and the operating hours can be read out.
- Video norm:
  - The display detects the applied video norm and automatically sets itself to it.
  - "New" norms not yet set (VESA standard), can (must) be set. The next time this norm is applied, the display automatically sets itself to the norm.
  - There is separate set of parameters in the display for each norm.

    This means that each norm used must be set individually.

    Exception: The backlight setting (max. brightness) has only one register; this means that all norms are displayed at the same max. contrast.
- Backlight:
  - The backlight is automatically adjusted.

    This means that the maximum contrast that is set is retained to the control maximum.

    The control maximum is achieved when the value 255 is displayed in the OSD Menu +> Service Level 2 +> Calibration for Backlight command.

    A lower value indicates that the control is not yet at stop.
  - For minimum luminous density values, depending on the system, see (AX System-related Installation / Settings / p. 32).

    If there is a drop below the "minimum value", replace the display.

Technical Data

Technical Data

Power Supply	Voltage range => 100V, -10% to 240V, +10%. Nominal power rating => 0.5A at 240V / 1.0A at 100V. Power line frequency => 47Hz to 63Hz. Power consumption => 100V / 240V: < 75W.
Video	**Digital Inputs:** • DVI-D, single link. **Analog Inputs:** Adapters are not included in the shipment. • **BAS Signal:** Via a 15-pin Sub-D connector (female). - Video Level: 0.5 .... 1.0 Vpp - Synch. Level: 0,2 ..... 0.3 Vpp • RGB, H/C synch and V synch. Via a 15-pin Sub-D connector (female). • Analog via DVI -I input (DVI -I connector)
	• **Timings:** The timings are stored in the FW for all applications released for Med (AX). It is also possible to store "new" timings (conforming to the VESA standard); these must be adjusted (if necessary). When saved, they are placed in the background and when recalled are displayed correctly automatically. A maximum of 10 "customer-specific" timings can be adjusted. Starting with the 11th timing, the "oldest" is deleted.
Luminous Density	Max. luminous intensity = 600 cd/m2 (typical). When shipped (typical): 400 cd/m2 to 0.8 cd/m2. 550 cd/m2 to 0.8 cd/m2 (with external light sensor in a brightly lit room). Note: When operating with higher luminous density than specified (400cd/m), the operational life of the backlight is automatically reduced!
Ambient Light Sensor	The ambient light sensor is located at the top left of the front panel as viewed from the front. When the ambient light sensor is switched on, the max. brightness of the ambient light is compensated.

Climate	**Transport (in original packaging):** Ambient temperature: -20 to + 60°C; temperature gradient <5°C/h Relative humidity max. 75% at +25°C, no condensation. Air pressure 1060 to 600 hPa **Operation:** Ambient temperature: + 5 to + 40°C; temperature gradient <5°C/h Relative humidity max. 75% at +25°C, no condensation. Air pressure 1060 to 600 hPa
Installation	Heat dissipation is achieved by "natural" convection; a fan is not installed. The free setup height as well as the side and rear distance must be at least 100 mm. However, installation in the DCS is permitted.

Pixel Defects

Pixel Defects

Pixel Errors	**Maximum Number**
White	0
Black	5
2 paired white	0
2 paired black	2
3 paired white	0
3 paired black	0
Total Pixel Errors	**6**
Distance between defective pixels	20 mm

Repair / Troubleshooting

NOTE

- **In a malfunction situation, the display is only completely replaced.**

  There are no individual spare part numbers.
- **"Only" the display is available as a replacement part.**

  In a replacement part situation for table application, the display must be attached to the existing base.
- **For replacement part numbers, see the SPC (Spare Parts Catalogue).**
- **Every defective display must be returned with an exact description of the error. Without this error description, it is virtually impossible to find sporadic and/or temperature-related errors as well as system-related causes.**
- **After mechanical installation, see (Replacing the TFT Monitor / p. 20), every display also has to be adjusted to the system, see (AX System-related Installation / Settings / p. 32)**

Test and Auxiliary Equipment

- All required settings must be performed using the push buttons on the front of the unit.
- A standard flashlight to adjust the ambient light sensor (if activated).
- SMFit measurement instrument for luminous density measurement.

  To order, see the Spare Parts Catalogue.

  Operation:

- After switching it on, self-adjustment takes place.

  During this time, the measurement instrument must be placed on a mat as shown on the right, so that the measurement input is darkened!

Fig. 3: SMFit Spot Luminance Meter 3

- Self-adjustment:

  While the display is - 0 -, see illustration, the measurement instrument must be on a mat (darkening of the measurement input)!

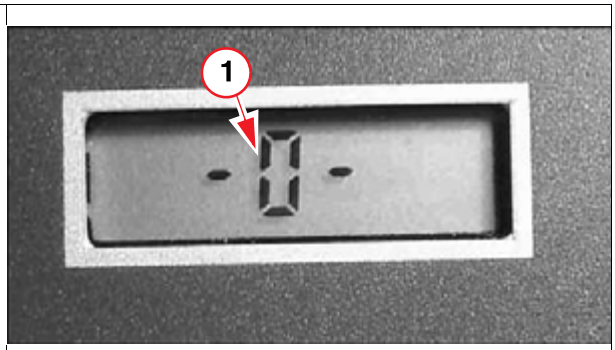


Fig. 4: SMFit Spot Luminance Meter 2
Pos. 1 Self-adjustment running

- Switch on by pressing the On/Off button, see Pos. 1.
- When the self-adjustment is finished, a measurement value and the mode, see Pos. 3, are displayed.
- The measurement instrument must be set to direct measurement (mode "D") for the monitor adjustment.

  The mode, see Pos. 3, is set by briefly pressing the On/Off switch, see Pos. 1.

  A = Remote measurement (DIN)

  D = Direct measurement (adjustment),
- The current measured value can be saved by pressing the "run stop" button, see Pos. 2, (e.g. so that it can be read more easily). By pressing the button again, there is a return to the current measurement.

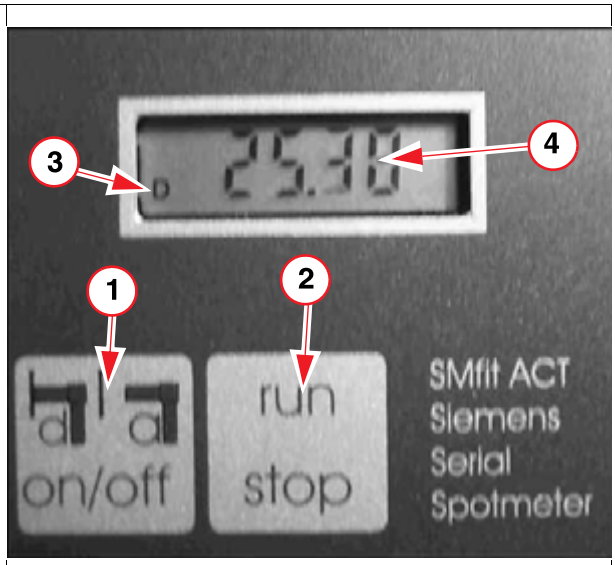


Fig. 5: SMFit Spot Luminance Meter 1

Pos. 1	On/Off switch <=> toggle switch
Pos. 2	Switch to hold measurement value
Pos. 3	Mode indicator
Pos. 4	Measurement value

General Remark Regarding Use of the OSD Menu

Key Functions

- The front buttons are designed without a "designation", Pos.1 - 4.
  - All required adjustments are made using the push-buttons on the front.
  - The push-buttons are blocked when shipped (new system).

    Unlock or lock them as follows:

    The OSD menu may not be active when they are being unlocked.

    Press the SET button (4) 1x.

    Press the Up button (2) 3x.

    The OSD menu can then be selected using the Menu button.
  - The OSD menu can also be started without an input signal.
- Basic Functions of the Front Buttons
  - Menu button (1)

    Opening the OSD menu.

    Skip to the next line (from top to bottom).
  - Up (2)

    Slide controller (slider) => larger value selection point => open.
  - Down (3)

    Slide controller (slider) => lower
  - Set (4)

    Always one menu level higher.
- Operating display:
  - Green => switched on
  - Yellow => energy saving mode
  - Blinking yellow => energy saving mode, only with digital control.
  - Slowly blinking yellow => power switch on, no input signal.

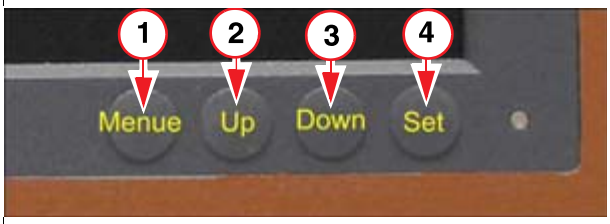


Fig. 6: DSB 1906-DC.... front buttons

Pos. 1 Menu button, number **1**

Pos. 2 Up button, number **2**

Pos. 3 Down button, number **3**

Pos. 4 Set button, number **4**

OSD Menu

Tab. 3 Button functions in the OSD menu

Button(s)	Action
Menu	Selection of the OSD / menu item
up (+)	Open the menu item, a sub-menu can be recognized by the fact that the menu title is highlighted dark. Set the value up or to the right. Input selection (analog <=> digital).
down (-)	Set the value down or to the left.
Set	Close the menu item (press one level higher 1x).

Tab. 4 Blocking/Unblocking the OSD Menu

Function	Action
OSD Menu block or enable	Press the Set button (4) 1x and the Up button (2) 3x. The OSD may not be opened to block or release the OSD! If opened, first exit the OSD using "Undo". If the OSD is blocked, only the input signal can be switched with the Up and Down buttons.
Select Service Level 2.	Press the Up button (2) 1x and the Down button (3) 2x. To get to the Service Level 2 menu, the following procedure is necessary: • Select the OSD menu (1). • Select Service Level 2 with the Menu button (1). • Open the Service Level 2 menu by pressing the Up button (2) 1x and the Down button (3) 2x. In service level 2, expanded adjustments can be performed.
Adjustment values Save	Press the Set button (4) as often as required until the "Quit OSD" menu item appears. Any changes made are accepted with "Accept changes". The "new" settings are rejected with "Reject changes". Selection is made with the "Menu" button (1). Select with the "Up" button (2).

Tab. 5 OSD Menu

Menu	Brightness / Contrast	Brightness	For adjustment, see (AX System-related Installation / Settings / p. 32).
		Contrast	For adjustment, see (AX System-related Installation / Settings / p. 32).
		Backlight	For adjustment, see (AX System-related Installation / Settings / p. 32).
		RGB relationship	Selection => 1
		Black level	Brightness “not used“
			Contrast “not used“
	Position / Zoom	H-Position	For adjustment, see (Size / Position / p. 33).
		V-Position	For adjustment, see (Size / Position / p. 33).
		Zoom	Selection => Fill Screen
	Source	Source selection	Not needed; selection is automatic
	Auto functions (can only be selected when controlled via the VGA D-Sub).	Auto Brightness Contrast	Use only if the monitor is completely incorrectly adjusted. In conclusion, the adjustment must be performed per (AX System-related Installation / Settings / p. 32)!
		Auto Position Phase Frequency	For adjustment, see (AX System-related Installation / Settings / p. 32).

	Language	German/English	Selection => English
	Others	Frequency / Phase	For adjustment, see (AX System-related Installation / Settings / p. 32).
		Sharpness	Active only if the FBAS and/or the S-Video input is used. It can also be selected when DVI is active, but has no effect.
		OSD Settings	If required, the position and the "transparency" of the OSD menu can be set here.
		ALS/DPMS Settings	Configuration is system-dependent; the status when shipped is deactivated.
		Status	Status display of the monitor (e.g. temp., operating hours.....)
	Service level 2 For selection see (General Remark Regarding Use of the OSD Menu / p. 14)	Calibration	Factory setting and status displays.
		User settings	Factory defaults! It is possible to return to the factory defaults using "Reset User settings" in this screen. In this case, all settings (B/KC/Phase/Frequency) must be repeated!
		Test and Reset	"Reset to factory defaults" **may not be applied!** If this option is selected, the original parameters are loaded.
		LUT Choice	Backlight Control (factory default) and selection of the LUT (Gamma curve).
		Tolerance	Factory default and selection of "Emergency mode, analog" for AX applications.
		Others	Factory defaults.
		Temperature	Factory default (threshold values for temperature monitoring).

Troubleshooting

- **General:**

  Every defective TFT monitor can be replaced only completely.

  The replacement monitor is always shipped without a base; in other words, if used with the table, the existing base must be used again.

  Fuses are not replaced if a fuse is defective; the monitor must be replaced. A fuse responds only if an error (in the monitor) is present; because of this, replacing a fuse is not reasonable.

- **Troubleshooting:**

Malfunction	Possible Cause	Remedy
TFT monitor displays no image, mode LED is off.	Fuse defective. Power cable not plugged in or line power missing.	1. Fuse okay, line power present. 2. Replace the TFT monitor.
TFT monitor does not display an image. Mode LED blinks green.	No video/synchronous signal (cable or video source). Inputs incorrectly plugged in, with a new installation.	1. Video/synchronous signal present. - Check the source. - Check the video cable. 2. Replace the TFT monitor.
Out-of-focus image. Disturbances in the vertical lines.	Frequency and/or phase incorrectly set. Disturbances in the video signal.	1. For frequency / phase settings, see (AX System-related Installation / Settings / p. 32). 2. Make sure that the video signal has no disturbances. 3. Replace the TFT monitor.
Other malfunctions (sporadic)	Plug-in connection(s) loose.	1. Make sure that there is not a "control problem" (line power/video). 2. Replace the TFT monitor.
Required contrast no longer reached?	BA signal is too low.	1. The **BA** signal must be at least 0.5V, otherwise “full control” is no longer ensured. 2. An B/C adjustment under (AX System-related Installation / Settings / p. 32) makes no improvement. 3. Replace the TFT monitor.

Malfunction	Possible Cause	Remedy
Image position OK. Mode LED blinks red.	Temperature limit value in monitor has been reached. The monitor is automatically shut down after a brief time; when the temperature has sunk, it starts again automatically.	1. Make sure that the ventilation passages are free. 2. Replace the TFT monitor.
Pixel defects: Individual / several pixels are displayed incorrectly.	Panel (Monitor)	1. Make sure that there are more pixel defects than are permitted in the table (Pixel Defects / p. 10). 2. Replace the monitor. List the pixel defects.
If undefined "effects" occur that could possibly be traced back to configurations.	Perform Reset User Settings, then a "readjustment" according to (AX System-related Installation / Settings / p. 32) must take place.	Reset: Open the OSD menu (1x4 and 3x2) => select Service Level 2 (1) => open (1x2 and 2x3) => select User Settings (1) => open (2) => select Reset User Settings, (1) => press Up (2) => the reset is performed.
	Shipped configuration is "wrong". This effect is possible only with a "new installation".	Check the configuration: AXIOM Luminos dRF / Artis .. see (Configuration List: / p. 65); UROSKOP Access, see subchapter (Configuration List / p. 85).

General information

NOTE

DIN V 6868-57 Acceptance Test for Image Display Devices

(as of 02/2002 is required for Germany only):

If the display is specified as a diagnostic monitor (Category A or B), an Acceptance Test must be performed after replacing the display: The serial number of the monitor and new reference values have to be entered in the acceptance protocol.

Installing the Replacement Unit

General information on replacement (table / DCS)

NOTE	**In a spare parts situation, only the TFT monitor or base (in the case of table application) may be ordered as a spare part.**

General Note for UROSKOP Access:

The monitor DSB 1906-DC is controlled exclusively via VGA.

Note regarding DVI control:

The DSB 1906-DC / DC-MN is generally controlled via the DVI input.

In the case of longer distances (DCS or monitor trolley), for the:

- **Angio application** a fiber optic cable is used. The fiber optic cable signal is converted to a DVI signal via an adapter at the DVI input.

  The adapter at the DVI input requires a supply voltage. This is provided by the 5 V output of the monitor. When using the fiber optic cable, the adapter has to be connected to the 5V output of the monitor (separate voltage cable).

- **Fluoro application** a network cable is used. The network cable signal is converted to a DVI signal via an adapter at the DVI input.

  The adapter at the DVI input requires a supply voltage. The voltage is provided to the adapter via the DVI input of the monitor. In contrast to the fiber optic control, a separate voltage connection is not required.

Note regarding mechanical VESA installation (screw length):

Two different screw lengths are used, see figure.

The monitor will be destroyed if the long screws are used with the monitor base.

- Pos. 1 (short screws)

  May only be used with the monitor base (table application).

  The screws are included in the delivery volume for the monitor base.

- Pos. 2 (long screws)

  These may only be used with the DCS or monitor trolley.

  In this application the cover is used, see (1/Fig. 12 / p. 24). This is why the longer screws are required.

  Only the screws from the monitor that was removed may be used. Depending on the option, different screw lengths can be used.

  A screw that is too long can destroy the monitor!

Fig. 7: DSB 1906, monitor base as delivered

Pos. 1 used for monitor base only

Pos. 2 used for DCS or monitor trolley only

Table application

Monitor disassembly:

- Place the display on a mat, see figure, to protect the panel and front frame from damage.
- Extend the base to maximum length.

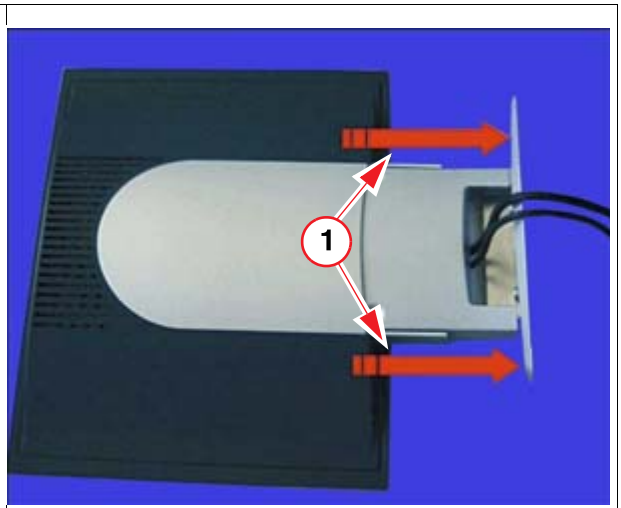


Fig. 8: DSB 1906 desktop (disassembly)

Pos. 1 Raise monitor to max. height

- Remove the back cover (Snap in), see figure.

Fig. 9: DSB 1906-DC / DC-MN
Pos. 1 Remove cover

- Loosen the 4 Torx screws, see figure.

  Notice: One rotation is sufficient; the screws remain in the unit.
- Pull the base downward and remove.
- Disconnect the connection cable from the display.
- Remove the strain relief from the power cable.

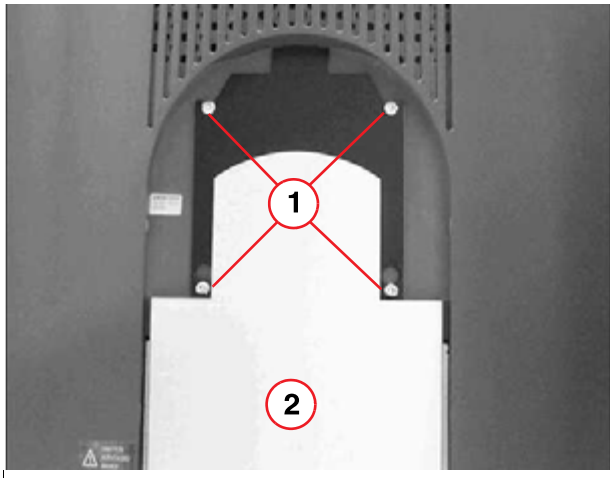


Fig. 10: DSB 1906 desktop disassembly 3
Pos. 1 4 mounting bolts
Pos. 2 Monitor base

- The cables remain in the base because the base will be reused.

  If another base has to be connected, remove the cable from the base as shown in the figure.

Fig. 11: DSB 1906 desktop (disassembly 4)
Pos. 1 Cable duct inside monitor base

Installing the replacement unit:

- The replacement unit is always delivered with a cover, see Pos. 1.

  This cover has to be removed to use the monitor base.
- Remove the covers from the electrical connectors, see Pos. 2.

Fig. 12: DSB 1906-DC / DC-MN
Pos. 1 Cover (for DCS or monitor trolley only)
Pos. 2 Cover (connector)

- Remove the "large" snap-in cover.

  It will not be required when using the base.

Fig. 13: DSB 1906-DC / DC-MN
Pos. 1 Remove cover for monitor base

- Reconnect the cables.
- IMPORTANT:

  Secure the power cable with the strain relief, see Pos. 1.

  A "cable tie" is shipped along in the holder, see Pos. 1.

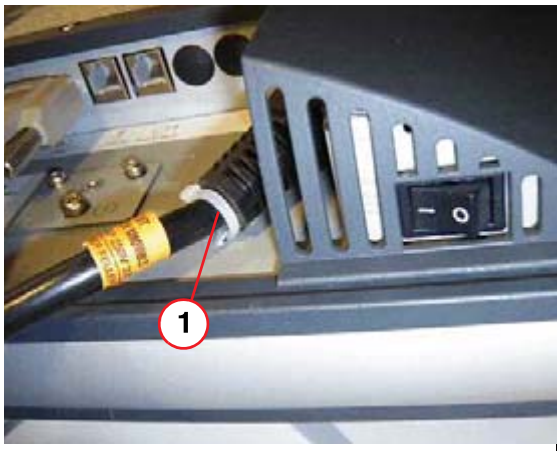


Fig. 14: DSB 1906 power cable
Pos. 1 Strain relief

IMPORTANT:

The screws delivered with the monitor may not be used; instead, use the "old" screws to secure at the base, see (General information / p. 20).

- Re-install the base in reverse order.
- Re-insert the back panel (snap in, see figure).

Fig. 15: DSB 1906 desktop (disassembly 2)
Pos. 1 Close cover

Perform the adjustment, see (AX System-related Installation / Settings / p. 32).

Use in the DCS

NOTE

The replacement monitor is connected in the same manner as the defective monitor that is being replaced.

IMPORTANT: Different spacer adapters are used, (monitor <=> DCS) depending on the application. During replacement, the screws that were used previously absolutely must be used again. If replaced, the monitor can be destroyed if the mounting screws are too long!

- Loosen (but do not remove) the two screws at the cover, see Pos. 2 in the figure.
- Pull the screws "out" and remove the cover panel.

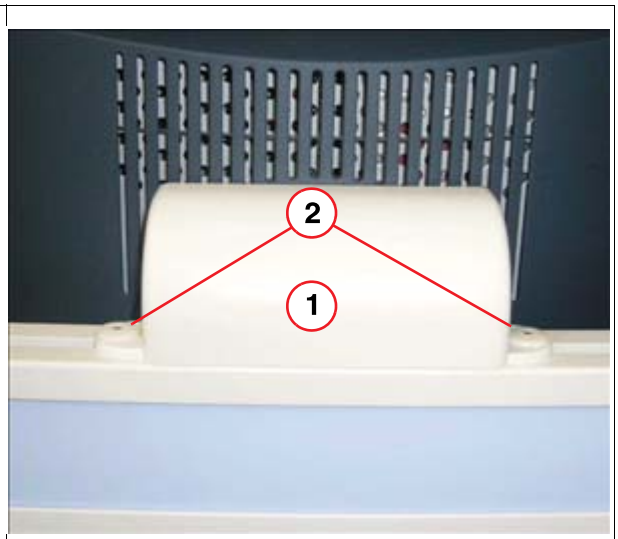


Fig. 16: DSB 1906-DC /DC-MN (DCS1)
Pos. 1 Cover
Pos. 2 2 screws (securing cover)

- Open the cover for the electrical connectors and disconnect all connectors, see Pos. 1.
- CAUTION, the monitor tilts forward!

  Remove the 4 screws on the VESA adapter (connection from the monitor to the DCS).
- Pull the monitor forward and out of the DCS.
- Install the replacement motor in the reverse order.

- For installation with fiber optic cables (e.g. Artis VC 11 xx or higher), see to the right.

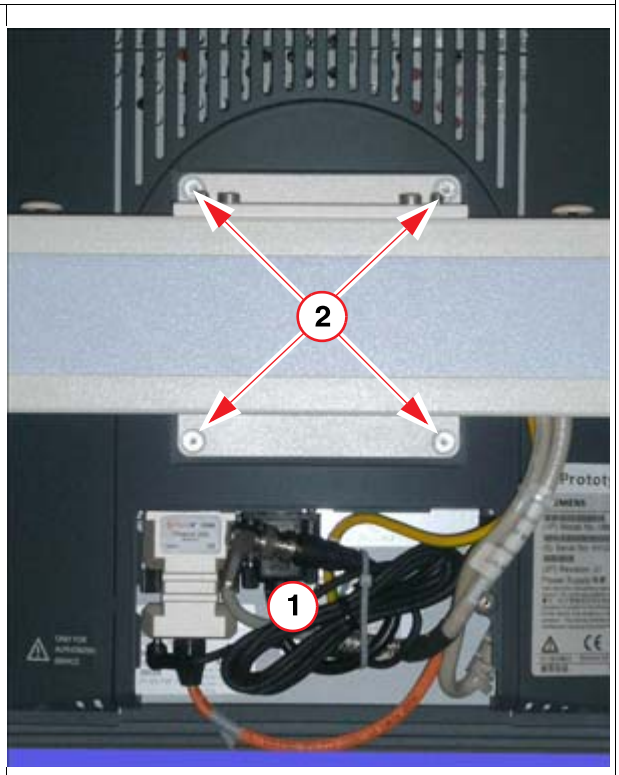


Fig. 17: DSB 1906-DC / DC-MN (DCS2)

Pos. 1	Electrical connections
Pos. 2	4 screws (Vesa adapter on DCS)

- With control using a CAT cable, the adapter (network cable to DVI) is provided with "contact rubber", see Pos. 3.

  This contact ensures safe shielding for the adapter housing.

  Ensure that the contact is secure, see Pos. 3.

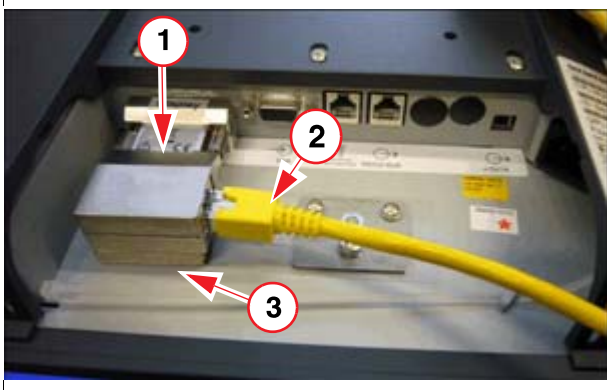


Fig. 18: DSB 1906-DC / DC-MN (video connection)

Pos. 1	Adapter (network cable to DVI)
Pos. 2	Network cable
Pos. 3	Contact rubber (adapter housing to monitor ground)

- Reconnect the cables.

  IMPORTANT:

  - **Secure the power cable with the strain relief, see** (1/Fig. 19 / p. 29).
    A "cable tie" is shipped along in the holder, see (1/Fig. 19 / p. 29).

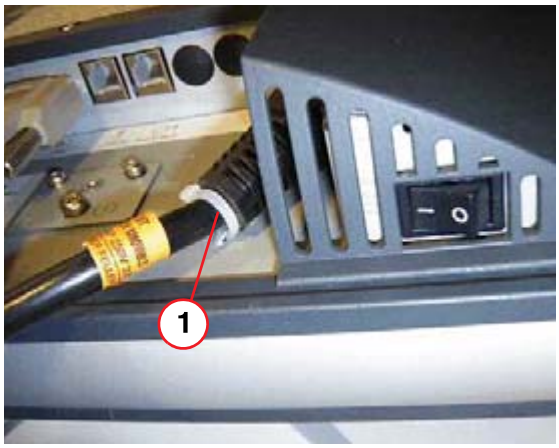


Fig. 19: DSB 1906 power cable
Pos. 1 Strain relief

  - If the monitor is the Live A monitor or the Reference A monitor with the Voice Control option:
    The video cable, which is present only with this configuration, must be grounded by means of grounding clamp, see (1/Fig. 20 / p. 29).

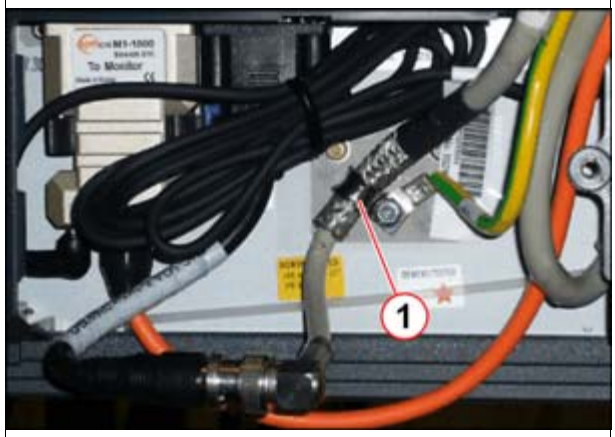


Fig. 20: Artis VC xx triax cable connection
Pos. 1 Triax shield grounding

- The monitor has to be adjusted depending on the application, see (AX System-related Installation / Settings / p. 32).

Use on monitor trolley

- IMPORTANT: the monitor tilts forward.

  Loosen the 4 screws, see Pos. 1.
- Position the monitor on the trolley toward the front (use a mat to prevent damage).
- Open the cover for the electrical connectors and disconnect all connectors, see Pos. 2.

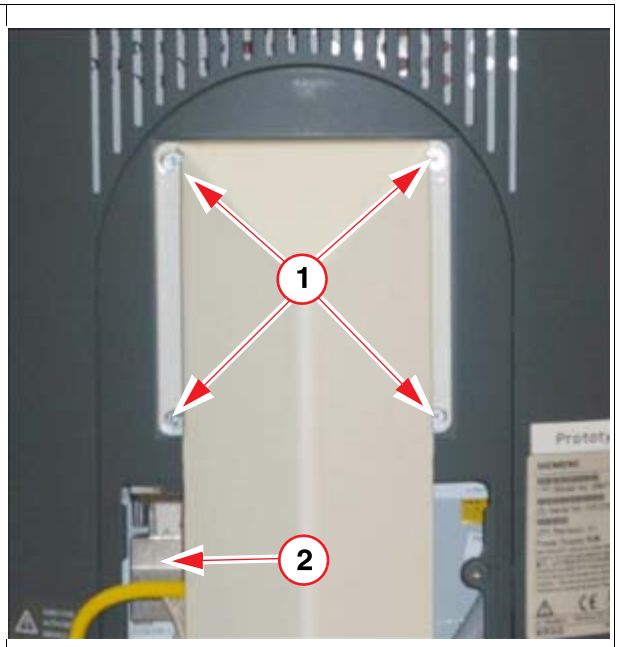


Fig. 21: DSB 1906-DC / DC-MN (monitor trolley)

Pos. 1 4 screws (Vesa adapter for trolley base)

Pos. 2 Electrical connections

- Reconnect the cables as they were previously.
- IMPORTANT:

  Secure the power cable with the strain relief, see Pos. 1!

  A "cable tie" is shipped along in the holder, see Pos. 1.

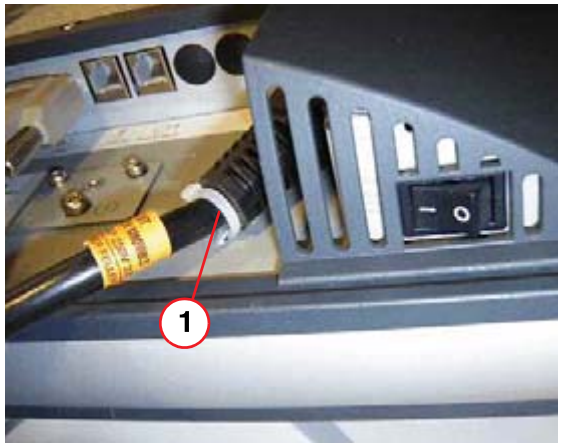


Fig. 22: DSB 1906 power cable

Pos. 1 Strain relief

Control using a CAT cable:

- The adapter (network cable to DVI) is provided with a "contact rubber", see Pos. 3.

  This contact ensures safe shielding for the adapter housing.

  Ensure that the contact is secure, see Pos. 3.
- Attach the monitor to the trolley base, see (1/Fig. 21 / p. 30).
- Depending on the application, the monitor has to be adjusted, see (AX System-related Installation / Settings / p. 32).

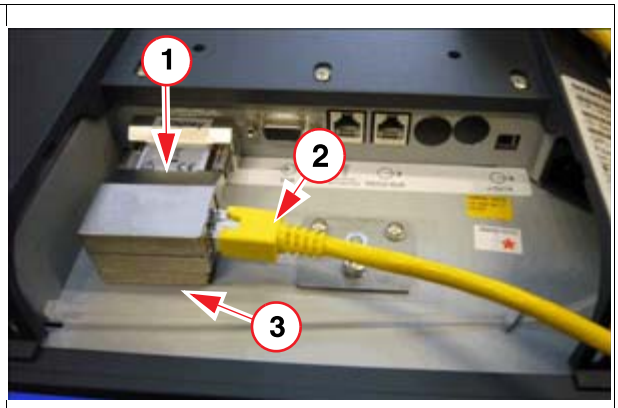


Fig. 23: DSB 1906-DC / DC-MN (video connection)

Pos. 1	Adapter (network cable to DVI)
Pos. 2	Network cable
Pos. 3	Contact rubber (adapter housing to monitor ground)

General Information

NOTE

DIN V 6868-57 Acceptance Test for Image Display Devices

(as of 02/2002 is required for Germany only):

If the display is specified as a diagnostic monitor (Category A or B), an Acceptance Test must be performed after replacing the display: The serial number of the monitor and new reference values have to be entered in the acceptance protocol.

- **OSD Operation:**

  For general remarks regarding operation of the OSD menu (release of operation, etc.), see (General Remark Regarding Use of the OSD Menu / p. 14).

- **Adjustment:**

  As a rule, the timings used in the Med Division are preset.

  "Only" the adaptations described in the corresponding chapters (systems) must be performed.

Adjustment Instructions, applicable for "all" Applications

General

- If used in systems with the Syngo platform, make sure that when selecting the test images, the "window values" are fully opened!
- Adjustments may be performed only after a warm-up time of 20 minutes.
- The control buttons must be blocked again following installation.
- If two video norms are used on the display (e.g. emergency mode), then both video norms must be set!

  Exception: The backlight setting (maximum contrast) is not "norm-dependent". As a result, it is the same for both norms!
- The adjustments for brightness / contrast are made using the SMFit test meter.

  For operation see (Test and Auxiliary Equipment / p. 12)

  When performing the measurement, make sure that the measuring sensor does not exert any pressure on the panel surface. Otherwise, panel damage cannot be ruled out!

Size / Position

- Digital control (DVI):

  In the case of digital control, the on-screen display has to be correct; manual adjustment is not possible.

  If the on-screen display is incorrect and a defective graphics card can be excluded, replace the monitor.
- Analog control (Sub - D / analog input DVI):

  The on-screen display may be set as follows using auto-adjust:

  - Enable the OSD menu: Set (4) 1x and Up (2) 3x.
  - Open the **OSD menu** (1) => select **Auto functions** (1) => open with Up (2) =>
    Select **Auto Brightness Control** (1) => set to "**Off**" (2), lighted dot corresponds to selection =>
    Select **Auto Position Phase Frequency** (1) => set to "**On**" (2) =>
    " Select **Execute select auto function**" (1) => the auto-adjust starts with Up (2).

  - If you expect the on-screen display will still be incorrect, you can set it manually:
    OSD Menu => Size / Position

    The position can be set manually using H - size / position.

AXIOM Luminos dRF

NOTE

IMPORTANT!

If the DVI connector is unplugged while the system is switched on, images will not be displayed again when the connector is plugged back in!

This effect is specific to the Fluorospot Compact. Interrupting the connection switches off the graphics card.

The FLC has to be rebooted for the graphics card to be switched again to DVI.

If the monitor is switched off and then on using the power switch (back left), the DVI output of the graphics card is retained.

General

General Remark Regarding Use of the OSD Menu:

- For the operating keys, see the illustration; the numbering of the keys (1-4) occurs again in the adjustment.
- There is always a switch to a higher level / back when the Set button (4) is pressed.
- Unblock/block the OSD menu:

  No OSD display may be visible, then press the following key combination: Set (4) 1x and Up (2) 3x, with a pause between of approx. 1/2 sec.

  Open the OSD menu with Menu (1).
- For general operation, enabling / blocking, etc., see

  (General Remark Regarding Use of the OSD Menu / p. 14).

Fig. 24: DSB 19 ... Front buttons

Pos. 1	Menu button (number 1)
Pos. 2	UP button (number 2)
Pos. 3	Down button (number 3)
Pos. 4	Set button (number 4)

Selecting the Test Pattern

- Select the test patterns under:

  Patient List => “Settings” tab card => “Test images” icon

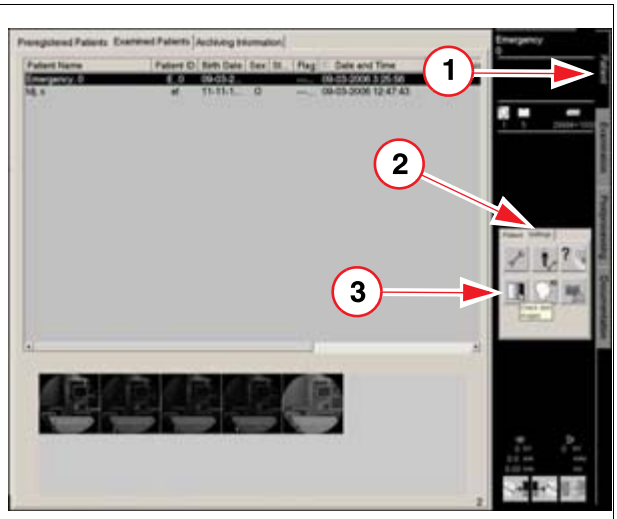


Fig. 25: FL-C, selection of test pattern 1

Pos. 1 Patient List

Pos. 2 "Settings" tab card

Pos. 3 "Test Patterns" icon

- Select => Icon “ Overview”, see Pos 1.

Fig. 26: FL-C, selection of test image 2

Pos. 1 “Overview” icon

- Select the LCD test pattern, see Pos. 1, with a double-click.
- Test pattern output on the monitor to be adjusted:
  a) Live Monitor:
     The test pattern is displayed with a double-click.
  b) Reference monitor, if configured:
     The test pattern is displayed on the Reference monitor by selectin the "Tools" tab card, see Pos. 2, and then selecting "REF".
- Return to "Overview" by selecting "Display overview".

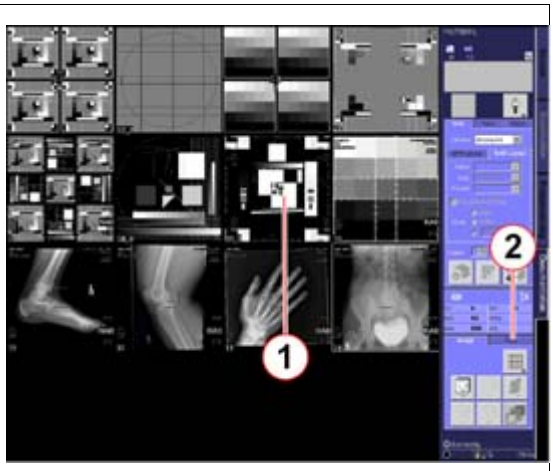


Fig. 27: FLC test patterns

Pos. 1 LCD test pattern (2% field)

Pos. 2 Tools tab card

Configuration

NOTE

The following configuration must be performed, depending on the system SW, so that the buttons in the application can be seen!

Configuration for AXIOM Luminos dRF.

- Open the **OSD** menu (1) => select **Service level 2** (1) => **Open** (1x2 and 2x3) => select **Others** (1) => **Open** (2) => select **Signal** (1) => select **RGB** with Up (2).

Adjustment of Brightness / Contrast / Ambient Light Sensor

Brightness / Contrast Adjustment

NOTE

Only the backlight controller can be adjusted, see the following adjustment!

Due to the digital control, all other settings are performed in the factory and may not be changed.

- Selecting the "LCD Test Image" (2%) test patterns, see: (Selecting the Test Pattern / p. 35)
  - SMFit test instrument: Switching on and Configuration, see (Test and Auxiliary Equipment / p. 12).
  - The mouse pointer may not be inside the measurement field during the measurement!
  - If the tolerance values are not maintained, magnify the measuring field, move it to the center of the image and repeat the measurement (differences in brightness can occur over the panel surface).
- Adjustment is performed in the **OSD menu**.
- The ambient light sensor must be switched off for the measurement of luminance:

  Set **OSD Menu => Others => ALS/DPMS setting => Ambient light Sensor (ALS) to "Off"**.
- Adjustment:

- Open the "LCD test pattern",

  see: (Selecting the Test Pattern / p. 35)
- Select **Open OSD Menu => Brightness/Contrast** (1).
- Open with **Up** (2)

  (the controller for Brightness and Contrast both stay at 50!).
- Adjustment:
  - Select **Backlight** (1).

    Using **Up** (2) and **Down** (3) in the 100% white field (see Pos.3), set **400 cd/m^2** +/- 20cd/m^2.
  - Drag the black area to the center of the screen (as much as possible).
  - Do not adjust; only a check!

    A value of 0.8, +0.15/-0.1 must result in the black field.

    If the tolerance values are not met, replace the monitor.
  - Go back one step with **Set** (4).

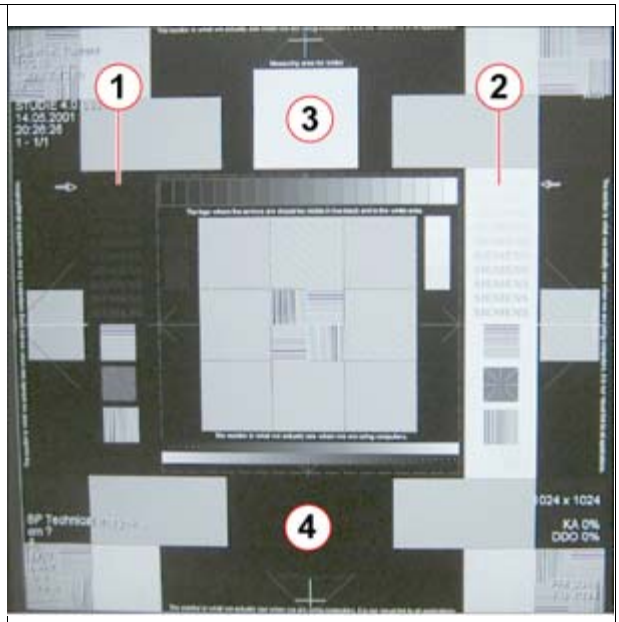


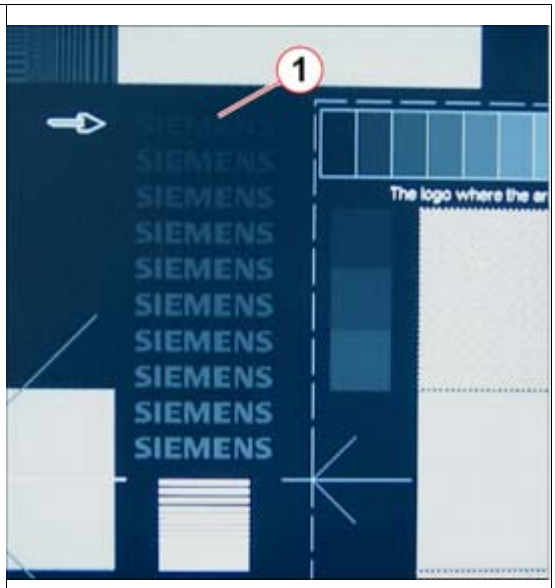
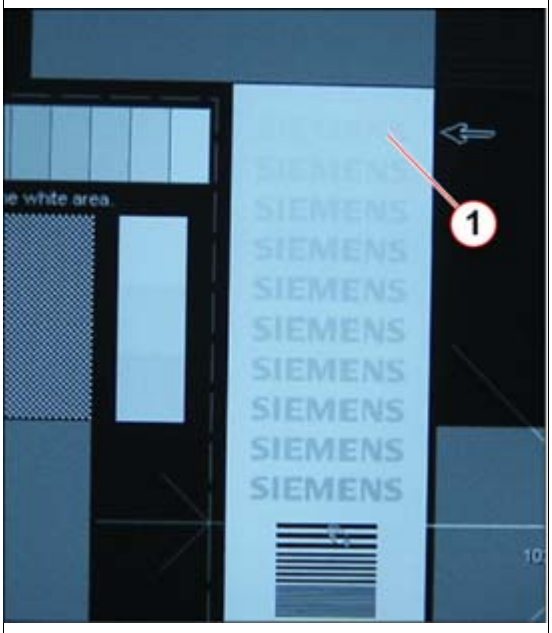
Fig. 28: LCD test pattern (2% field)

Pos. 1	2% field SIEMENS logo (white letters on black)
Pos. 2	98% field SIEMENS logo (black letters on white)
Pos. 3	100% white field
Pos. 4	0% white field (black field)

- **Continue with the ambient light sensor adjustment,**(Adjusting the Ambient Light Sensor / p. 39)!

Checking the Image Quality

Tab. 6 Resolution Check

• Select zoom (display the full image).	 *Fig. 29: LCD test pattern, 2% field* Pos. 1 2% field (white letters on black background)
• The last light "Siemens" logotype must just still be visible in the dark field (2% step), see (1/Fig. 29 / p. 38).	
• The last dark "SIEMENS" logotype must just still be visible in the light field (98% step), see (1/Fig. 30 / p. 38).	 *Fig. 30: LCD test pattern, 98% field* Pos. 1 98% field (black letters on white background)
The logo must be visible; if not, check the setting again.	

- **Continue with the ambient light sensor adjustment,** (Adjusting the Ambient Light Sensor / p. 39)!

Adjusting the Ambient Light Sensor

NOTE	**The ambient light sensor is always activated.**

Tab. 7 Sensor Adjustment

- Adjusting the sensor:
  - **Select Others (1) => Open (2) => select ALS/DPMS settings (1) => Open (2).**
  - Select **Ambient light sensor (ALS)** (1) => set to **"On"** (2), On is active when the dot is lighted.
  - Select **ALS delay** (1) => adjust **to 1** using **Down** (3) (only for adjustment, quick control).
  - The slider for ALS sensitivity was adjusted at the factory to the optimum constant operation of the equipment and as a rule should not be changed in the field.
  - Completely cover the external light sensor (front frame, top left).

    Select ALS offset (1) => using Up (2) and Down (3), adjust to 400cd/m^2, +/-20cd/m^2 in the 100% white field (see Pos. 3).
  - Shine the flashlight directly on the sensor (front frame, top left). This corresponds to maximum brightness.

    Select ALS limit (1) => using Up (2) and Down (3), adjust to 550cd/m^2, +/-20cd/m^2 in the 100% white field (see Pos. 3).
  - **Select ALS delay (1) => using Up (2), set to 140** (fixed value for control delay).
  - Save the new adjustment values:

    Press the **Set** button (4) as often as needed until the "**Quit OSD**" menu appears.

    Select "**Accept changes**" (1).

    Select the "**Up button**" (2); the new values are saved and the OSD menu is exited.

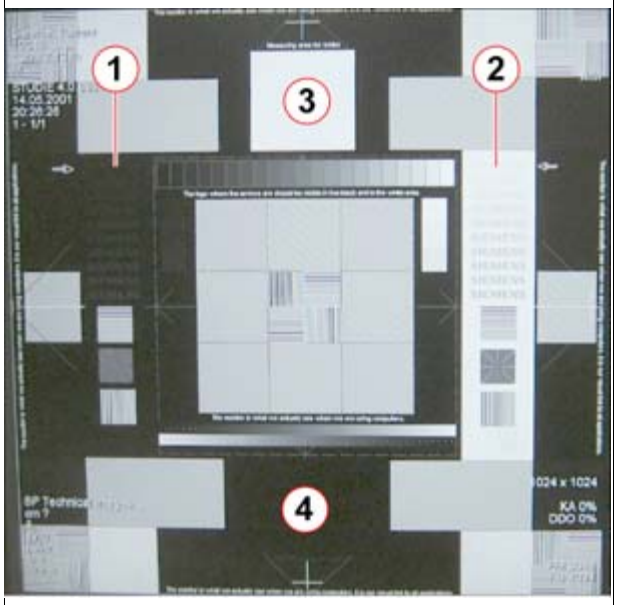


Fig. 31: LCD test pattern (2% field)

Pos. 1 2% field SIEMENS logo (white letters on black)

Pos. 2 98% field SIEMENS logo (black letters on white)

Pos. 3 100% white field

Pos. 4 0% white field (black field)

Monitor adjustment is complete.

Artis VC 12 xx or higher

General

General Remark Regarding Use of the OSD Menu:

- For the operating keys, see the illustration; the numbering of the keys (1-4) occurs again in the adjustment.
- There is always a switch to a higher level / back when the Set button (4) is pressed.
- Unblock/block the OSD menu:

  No OSD display may be visible, then press the following key combination: Set (4) 1x and Up (2) 3x, with a pause between of approx. 1/2 sec.

  Open the OSD menu with Menu (1).
- For general operation, enabling / blocking, etc., see

  (General Remark Regarding Use of the OSD Menu / p. 14).

Fig. 32: DSC 19 ..... front buttons

Pos. 1	Menu button (Number 1)
Pos. 2	UP button (Number 2)
Pos. 3	Down button (Number 3)
Pos. 4	Set button (Number 4)

Selecting the Test Pattern

Tab. 8 Selecting the Test Pattern

- Select the test patterns under:

  Patient => **Patient List** => **Service, Patient**.

  The particular required test pattern is described in the adjustment that follows.

- If the service, patient are not configured, it can be reinstalled as follows (see illustration, Pos. 1):

  Options => **Load Test Image**

  When it is loaded (as long as processing, see Pos. 2, is displayed, the download routine is not yet finished), perform a refresh in the browser.

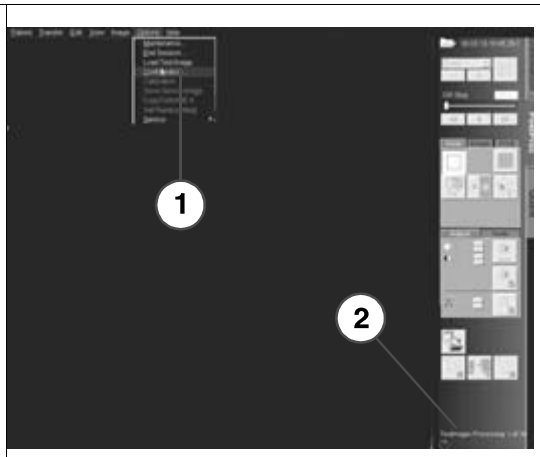


Fig. 33: AXIOM Artis, load test images

Pos. 1 Load Test Image

Pos. 2 Processing

- The test patterns that can be seen on the right are saved in "Service, Patient" and are required for the following adjustment:
  - Pos.1

    SMPTE test pattern
  - Pos.2

    H/C test pattern, was used for the adjustment (CRT monitor).
  - Pos.3

    LCD test pattern, is used for the H/C adjustment and for the check of contrast (2% / 98% fields) with LCD monitors.
  - Pos.4

    Postprocessing tab card; as a rule, the adjustment is performed in this tab card.

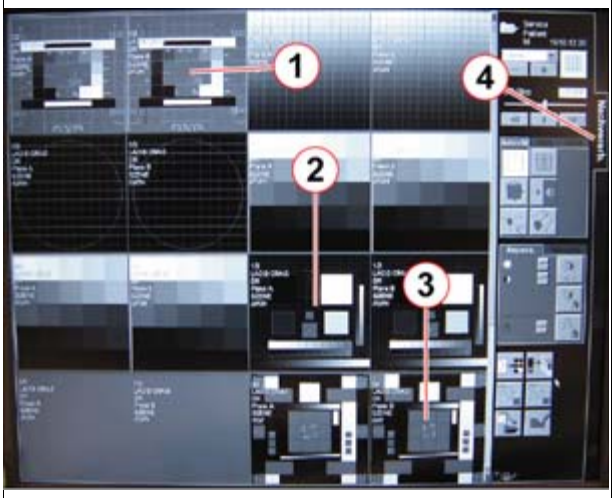


Fig. 34: Service patient

Pos. 1 SMPTE test pattern

Pos. 2 B / C test pattern

Pos. 3 LCD test pattern (2% field)

Pos. 4 Postprocessing tab card

The description of how the display of the test pattern follows on the monitor to be adjusted:

Tab. 9 Display of the Test Pattern on the Monitor

Procedure for test pattern output on the monitor to be adjusted:

- **Live Monitor, Control and Examination Rooms:**

  Select the appropriate test pattern in "Service Patient", it is displayed automatically on the control room Live monitor.

- **Reference Monitor, Control and Examination Rooms**:

  Select the appropriate test pattern in "Service Patient", select **REF**, see illustration, Pos. 2.

  The selected test pattern is dislayed on the Ref. monitors in the examination room and control rooms.

  With biplane systems, Planes A and B must be selected separately when REF is selected (monitor in the particular plane),

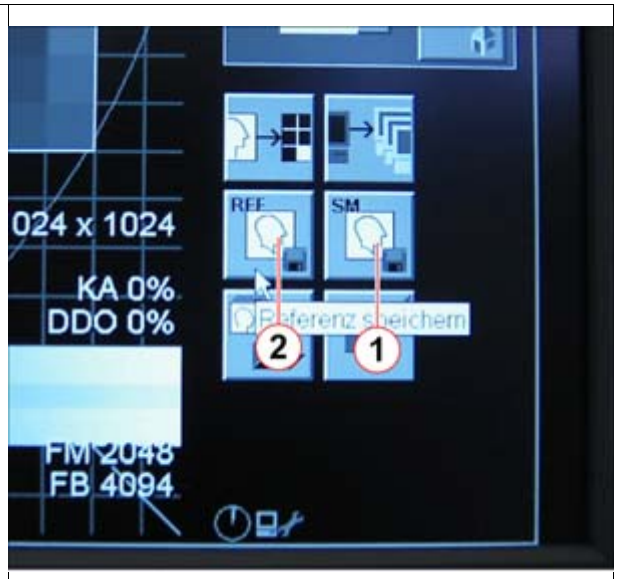


Fig. 35: Image display on the monitor

Pos. 1 SM (Store Monitor)

Pos. 2 REF (Reference image)

- **Second Reference Monitor** (if configured for Quant or Roadmap):
  - **With the "Quant" application:**

    Select Ref. 1 monitor in the same way as under Reference monitor.

    The switch the application from Examination to Quant; in this way, the test pattern is displayed on the Ref. 1 and the Ref. 2 (Quant) monitor.
  - **Without the "Quant" application:**

    Start Local Service under: Options => Customer Service => Local Service => open with PW => Configuration => Image System => Monitor, VCR Control => switch to Reference 2 Display (if yes, go to no or vice versa).

    IMPORTANT: After completing the adjustment, the configuration must be set back again!

    Select the Reference monitor in the same way as under Reference monitor.

Adjustment of Brightness / Contrast / Ambient Light Sensor

Brightness / Contrast Adjustment

Adjustment

NOTE	**Only (!) the backlight controller can be adjusted, see the following adjustment!** **Due to the digital control, all other settings are performed at the factory and may not be changed! If brightness or contrast is changed, other "gray steps" are lost (i.e., image information).**

- General:
  - SMFit test instrument: Switching on and Configuration, see (Test and Auxiliary Equipment / p. 12).
  - Check of the window value: The window must be opened completely, **FM 2048 / FB 4094**.
  - The mouse pointer may not be inside the measurement field during the measurement!
  - If the tolerance values are not maintained, magnify the measuring field, move it to the center of the image and repeat the measurement (differences in brightness can occur over the panel surface).
- The ambient light sensor must be switched off for the measurement of luminance:

  If the OSD menu is blocked, open it with: Set (4) 1x and Up (2) 3x.

  Open OSD menu (1) => select Others (1) => Open (2) => select ALS/DPMS setting (1) => Open (2) => select Ambient light Sensor (ALS) (1) => set to **"Off "** (2), Off is active when the dot is lighted.
- Go back 2 steps with **Set** (4) 2x.
- Backlight Adjustment:

- Open the “LCD test pattern“,

  see: (Tab. 8 / p. 41)
- Zoom the LCD test pattern (Zoom button/press Pan) and drage the 100% white field into the center of the image (as much as possible).
- Select **Open OSD Menu => Brightness/Contrast** (1).
- Open with **Up** (2)

  (the controller for Brightness and Contrast both stay at 50!).
- Adjustment:
  - Select **Backlight** (1).

    Using **Up** (2) and **Down** (3) in the 100% white field (see Pos.3), set **400 cd/m**^{2} +/- 20cd/m^2.
  - Drag the black area to the center of the screen (as much as possible).
  - Do not adjust; only a check!

    A value of 0.8, +0.15/-0.1 must result in the black field.

    If the tolerance values are not met, replace the monitor.
  - Go back 2 steps with **Set** (4).

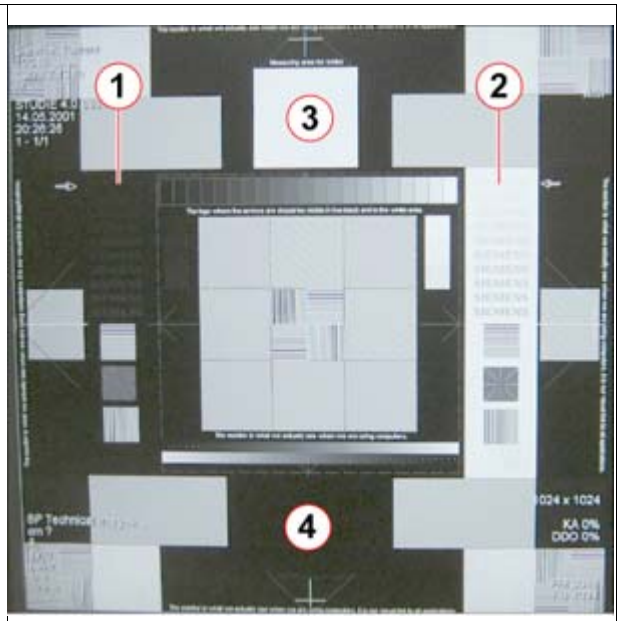
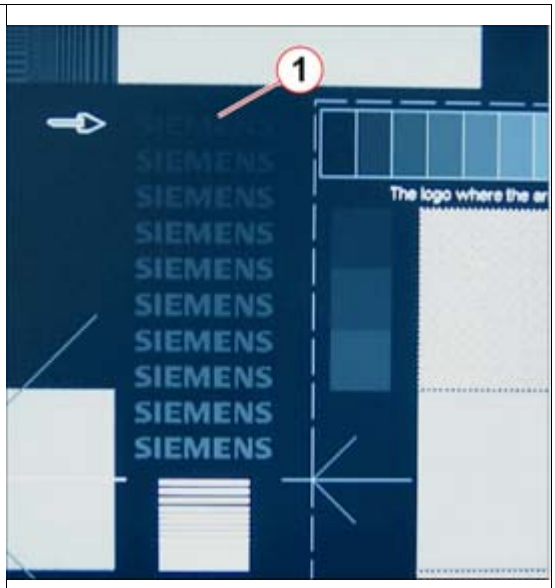
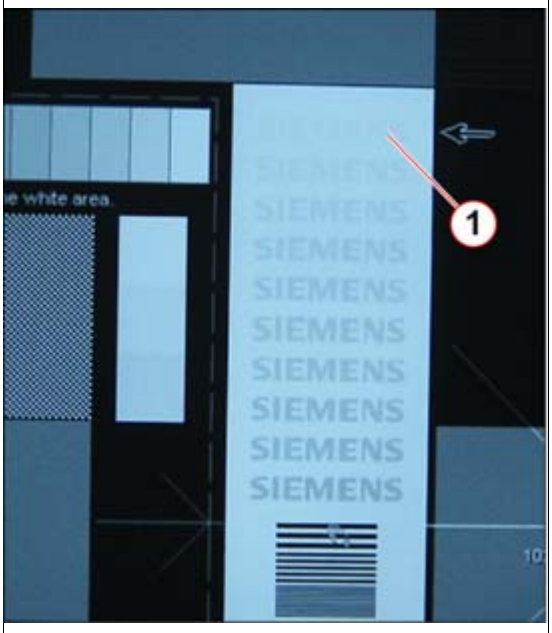


Fig. 36: LCD test pattern (2% field)

Pos. 1	2% field SIEMENS logo (white letters on black)
Pos. 2	98% field SIEMENS logo (black letters on white)
Pos. 3	100% white field
Pos. 4	0% white field (black field)

Checking the Image Quality

Tab. 10 Resolution Check

• Select zoom (display the full image). • The last light "Siemens" logotype must just still be visible in the dark field (2% step), see (1/Fig. 37 / p. 45). • The last dark "SIEMENS" logotype must just still be visible in the light field (98% step), see (1/Fig. 38 / p. 45). The logo must be visible; if not, check the setting again.	 *Fig. 37: LCD test pattern, 2% field* Pos. 1 2% field (white letters on black background)  *Fig. 38: LCD test pattern, 98% field* Pos. 1 98% field (black letters on white background)

- **Continue with the ambient light sensor adjustment,** (Adjusting the Ambient Light Sensor / p. 39)!

Adjusting the Ambient Light Sensor

NOTE	**The ambient light sensor is always activated and adjusted.**

Tab. 11 Sensor Adjustment

- Adjusting the sensor:
  - **Select Others (1) => Open (2) =>select ALS/DPMS settings (1) => Open (2).**
  - Select **Ambient light sensor (ALS)** (1) => set to **"On"** (2), On is active when the dot is lighted.
  - Select **ALS delay** (1) => adjust **to 1** using **Down** (3) (only for adjustment, quick control).
  - The slider for ALS sensitivity was adjusted at the factory to the optimum constant operation of the equipment and as a rule should not be changed in the field.
  - Completely cover the external light sensor (front frame, top left).

    Select ALS offset (1) => using Up (2) and Down (3), adjust to 400cd/m^2, +/-20cd/m^2 om tje 100% white field (see Pos 3).
  - Shine the flashlight directly on the sensor (front frame, top left). This corresponds to maximum brightness.

    Select ALS limit (1) => using Up (2) and Down (3), adjust to 550cd/m^2, +/-20cd/m^2 in the 100% white field (see Pos. 3).
  - **Select ALS delay (1) => using Up (2), set to 140** (fixed value for control delay).
  - Save the new adjustment values:

    Press the **Set** button (4) as often as needed until the "**Quit OSD**" menu appears.

    Select "**Accept changes**" (1).

    Select the "**Up button**" (2); the new values are saved and the OSD menu is exited.

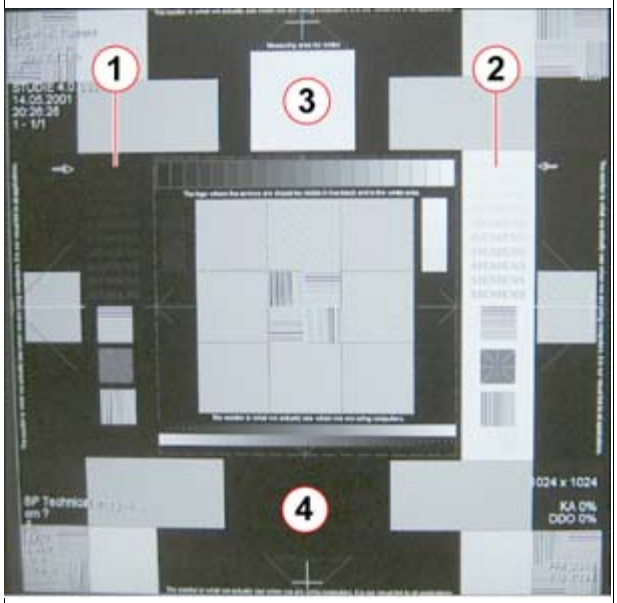


Fig. 39: LCD test pattern (2% field)

Pos. 1	2% field SIEMENS logo (white letters on black)
Pos. 2	98% field SIEMENS logo (black letters on white)
Pos. 3	100% white field
Pos. 4	0% white field (black field)

- Further procedure:
  a) If the currently adjusted monitor is the Live monitor in the examination room (and only this one!), the emergency mode must be configured and adjusted; continue with (Adjustment of Emergency Mode / p. 47).
  b) If the currently adjusted monitor is the Ref monitor in the examination room and the Voice Control option is being used (only if Voice Control is used), continue with (Adjusting Voice Control / p. 52).
  c) If the currently adjusted monitor is neither the one listed under a and b, the adjustment is finished.

  The conrol buttons must be blocked, press Set (4) 1x and Up (2) 3x.

  The adjustment is finished.

Adjustment of Emergency Mode

NOTE

- **"Only" one image is displayed on the Live monitor in the examination room in the emergency mode. All other monitors no longer display an image!**
- **The emergency mode must and can be adjuste only on this monitor; control is analog in the emergency situation (D-Sub).**
- **The emergency mode must be configured on the monitor. In this way, it is ensured that when an analog signal is present (emgerncy mode), a switch is made automatically to the emergency mode.**

Emergency Configuration and Adjustment

1. General Remarks regarding Control of "Emergency Mode":

The DCS Live monitor (emergency mode) is defined as the emergency monitor in the Artis VCxx SW.

This requires a D-Sub/VGA connection in addition to the DVI connection, see the illustration; an analog video signal is sent out via this during emergency mode (and only in the emergency mode).

If the emergency mode is configured in the monitor and an analog signal is present at the D-Sub input, the monitor always switches to this input, regardless of whether or not a DVI signal is present!

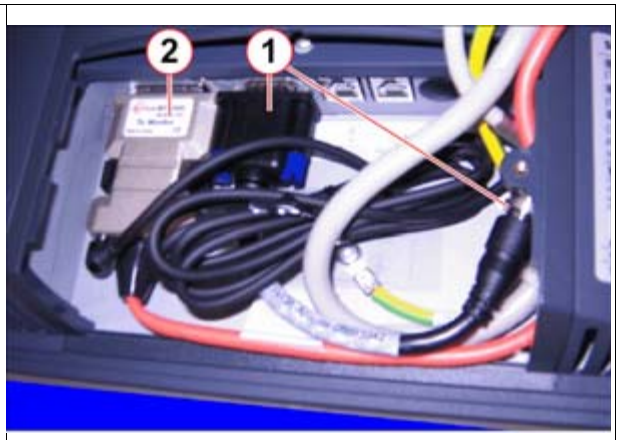


Fig. 40: Emergency mode control

Pos. 1 D-Sub input / BNC D-Sub adapter

Pos. 2 DVI input

Problem: If the emergency mode is configured, the OSD menu can no longer be selected (only with the emergency mode norm)! This means that the adjustment must take place prior to the emergency mode configurtaion, see the instructions.

Conditions:

Artis xx:

The emergency mode adjustment only can be performed beginning with **Artis SW VC13**. Prior to this, the test pattern is displayed only "weakly" and cannot be used for the adjustment!

Monitor:

Beginning with **FW 1.02**, configuration of emergency mode is possible (shipments beginning approx. September 2007).

2. Selection of the emergency mode test pattern in the AXIOM Artis:
   - Start Local Service under: **Options** => **Customer Service** => **Local Service**.
   - **Open** with the PW.
   - Select **Test Tools**.
   - Select **Hardware Tests**.
   - Select **RTC A Dipp Fru**: (NOTE: select the left arrow).
   - Select **Show SMPTE image on BYPASS output** (checkbox).
   - Select **Go**, bottom right
   - The test pattern is displayed on the Live monitor (NOTE: output of the test pattern is required approx. 1 min.).

     It appears for approx. 500 sec.; if more time is needed, it needs to be started again.
3. Display of the test pattern on the monitor:

a) The test pattern may not be visible automatically; however, if this is the case, the monitor must first be configured. If it is not displayed, continue with b.

   Switch emergency mode on the Axis to off.

   Open the OSD menu (1) => select Service Level 2 (1) => Open (1x2 and 2x3) => select Tolerance (1) => Open (2) => select Analog Emergency Mode (1) => use Up (2) to set to inactive.

   Select emergency mode on the Axis again (Note: output of the test pattern is required approx. 1 min.).

b) Switch the monitor to the D-Sub input / emergency mode input (the emergency mode must be selected "manually" for the adjustment).

   As soon as the emergency mode test pattern is displayed by the system (takes approx. 1 minute), manually switch to the D-Sub/VGA input by pressing the **Up** button (2). It is possible to switch back to the digital input with Down (3).

4. Perform the monitor adjustment for the emegency mode.

NOTE

1. **The backlight control may not be changed; it has been adjusted in the "normal mode" and can be adjusted only once.**
2. **Depending on the system SW, the image position of the test pattern is not 100% centered; ignore this, the X-ray display is centered.**

Tab. 12 Brightness/Contrast, Emergency Mode

Adjusting Brightness/Contrast:

- Open the **OSD menu** (1).
- Switch off the ambient light sensor:

  Select **Others** (1) => **Open** (2) => select **ALS / DPMS setting** (1) => select **Ambient light Sensor** (1) => select **Off** (2) => go back two steps with **Set** (4).
- Select **Brightness/Contrast** (1) => **Open** (2).
- Select **Brightness** (1), set 0.8, +/-0.2 cd/m^2 with **UP** (2) and **Down** (3) in the 0% white field (Pos. 4).
- Select **Contrast** (1).

  => increase it with Up (2) until the 95% field is no longer visible.

  => decrease it with Down (3) until the 95% field (Pos. 2) is just visible.
- The maximum brightness may not be set; the measurement value in the 100% white field (Pos. 1) should be 400, +/- 30 cd/m^2.
- Final Check: The value in the 0% white field must be measurable within the tolerance listed above; the 5% and 95% fields must be visible.
- Go back 2 steps with **Set** (4).

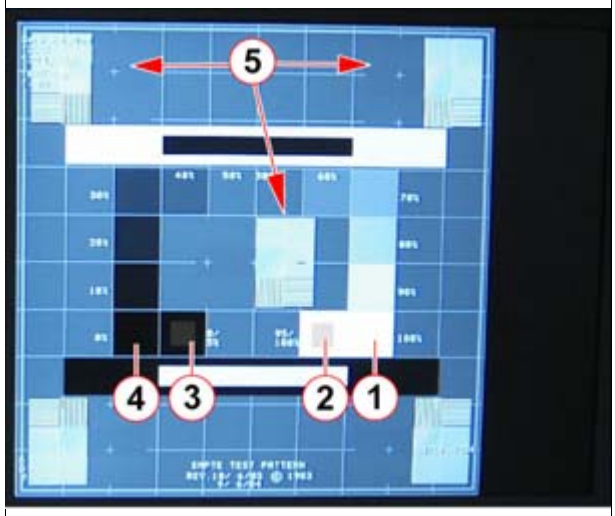


Fig. 41: SMPTE Emergency Mode

Pos. 1	100% white
Pos. 2	95% white
Pos. 3	5% white
Pos. 4	0% white (black)
Pos. 5	Resolution bars

Tab. 13 Phase/Freuency, Emergnecy Mode

Adjusting Phase / Frequency:

- Select **Others** (1) => **Open** (2) =>
- select **Frequency** (1) => adjust with Up (2) and Down (3) so that the image contents cover the entire panel mask and no image contents are cut off.

  If adjustment is correct, no vertical lines are visible in the line groups (resolution bars, Pos. 5).
- Select **Phase** (1) => adjust with Up (2) and Down (3) so that no horizontal lines are visible in the line grouips (resolution bars, Pos. 5) and focus is the same for all line groups.
- Go back 2 steps with **Set** (4).

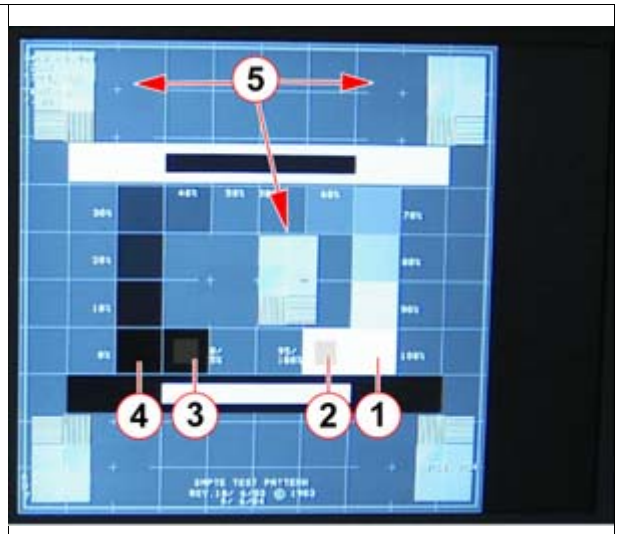


Fig. 42: SMPTE Emergency Mode

Pos. 1	100% white
Pos. 2	95% white
Pos. 3	5% white
Pos. 4	0% white (black)
Pos. 5	Resolution bars

5. Switch on the ambient light sensor.

   Select **Others** (1) => **Open** (2) => select **ALS / DPMS setting** (1) => select **Ambient light Sensor** (1) => select **On** (2) (active when the dot lights up).

   An adjustment is not performed; it is taken over by the digital mode!

   Go back 2 steps with **Set** (4).
6. Emergency Mode Configuration:

   a) Open the **OSD menu** (1) => select **Service level 2** (1) => **Open** (1x1 and 2x3) => select **Tolerance** (2) => **Open** (2) => select **Emergency mode analog** (1) => select **active** with Up (2).

   b) Select **RGB priority mode** (1) => select **inactive** (2).
7. Save the new adjustment values:

   Press the **Set** button (4) as often as needed until the "**Quit OSD**" menu appears.

   Select **Accept changes** (1).

   The new values are saved with **Up** (2) and the OSD menu is exited.
8. Switch the monitor off and on (the power switch is located at the back on the front left).

   The monitor must automatically display the emergency mode test pattern; in other words, the automatic switch-over functions.
9. Wait until the emergency mode test pattern goes out automatically or cancel it with "Abort" at the bottom right (Syngo user interface) (NOTE: the routine also takes approx. 1 min.).
10. Perform the final test; the patient can be generated and X-ray can be triggered.

11. **The monitor conrol buttons must be blocked, press Set (4) 1x and Up (2) 3x.**

    Monitor adjustment is complete.

Adjusting Voice Control

General:

If the Voice Control option is being used, the Reference monitor in the examination room is used for display.

1.

   This must then be adjusted/configured as described below.

   Prerequisite is: the monitor must have FW =/> 1.02. Check: Open OSD (1) => select Others (1) => Open (1) => select Status (1) => Open (2).

Configuration

Configuration for Voice Control Application:

1. Select Voice Control at the system.
2. With FW 1.00 (**only** the first systems are affected, up to shipments to approx. 08.2007)

   Open **OSD** (1) => select **Service level 2** (1) => **Open** (1x2 and 2x3) => select **Tolerance** (1) => **Open** (2) => select **Emergency mode analog** (1) => select **active** (2).

   Go back 2 steps with **Set** (4).
3. Beginning with FW 1.02 (beginning with shipments in 08.2007)

   Open **OSD** (1) => select **Service level 2** (1) => **Open** (1x2 and 2x3) => select **Tolerance** (1) => **Open** (2) => select **Emergency mode analog** (1) => select **Inactive** (2).

   Select **RGB priority mode** (1) => select **Active** (2).

   Go back 2 steps with **Set** (4).

Adjustment

Adjustment for Voice Control Application:

1. The voice control image must be visible on the monitor; no image limitations may occur and the lettering may not be "jagged".

   If OK, block the front buttons; see Point 3.
2. If problems occur, an auto-adjust must be performed:

   Select **Auto functions** (1) => **Open** (2) => select **Auto Brightness Contrast** (1) => select **On** (2), the bright dot is selected => select **Auto Position Phase Frequency** (1) => select On (2), the bright dot is selected => select **Execute selected auto functions** (1) => perform with **Up** (2) (OSD is closed automatically).
3. Following auto-adjust, the voice control image must be displayed correctly.

   The monitor conrol buttons must be blocked, press Set (4) 1x and Up (2) 3x.

4. Perform a check:
   Voice control not selected; the Artis REF image must be visible.
   Voice control selected; the voice control image must be displayed on the REF monitor.
   Monitor adjustment is complete.

AXIOM Multix M / Vertix MD Trauma / Vertix Solitaire M

General

General Remark Regarding Use of the OSD Menu:

- For the control buttons, see the illustration.

  Numbering of the buttons occurs again in the adjustment for easier orientation.
- There is always a switch to a higher level when the Set button is pressed.
- For general operation, enabling / blocking, etc., see

  (General Remark Regarding Use of the OSD Menu / p. 14).

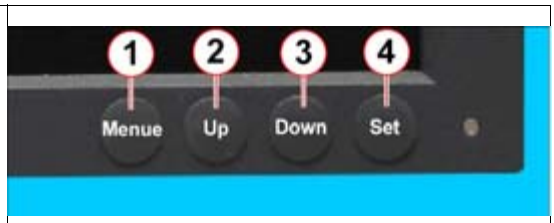


Fig. 43: DSB 19 ... Front buttons

Pos. 1	Menu button (number 1)
Pos. 2	UP button (number 2)
Pos. 3	Down button (number 3)
Pos. 4	Set button (number 4)

Explanation of which input (digital or analog) is used

Explanation of which input signal is used:

- Whether the DVI input is used for the currently applied standard or whether the anlog input is used is explained as follows:
- Open the **OSD menu** => select **Source** (1) => Open (2) => the mode being used is displayed in white letters, see on the right.

  In the example, the DVI digital input is used (white letters mean selected).
- Display of **DVI Digital** => continue with (Adjustment with Digital Control / p. 61).
- Display of **BNC or VGA** => continue with (Settings with Analog Control / p. 54).

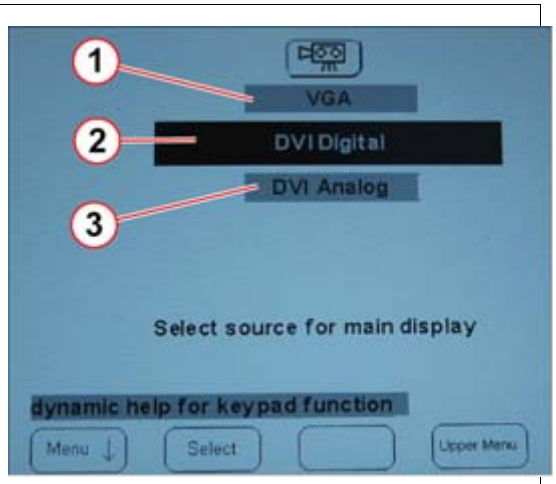


Fig. 44: Display of the mode (analog <=> digital)

Pos. 1	(D-Sub) input is used
Pos. 2	DVI digital input is used
Pos. 3	DVI analog input is used

Settings with Analog Control

Test Pattern Selection => Moiree.bmp

- To order the test pattern, see (Test and Auxiliary Equipment / p. 12).

- The test pattern for adjustment of frequency / phase / position is started from CD; it may not be installed on the PC.

- Select the test pattern:
  - On the Touch Screen, select the "**System**" symbol => select the **Setup menu** (or Configuration) => select **Administrator Setup** => select **Service Tools** => enter the password **"99999"** => select **OK** => in the Service Tool, select the "**explorer**" pop-up menu => select **Start** => enter the password in the Service Login screen.

    Enter "Space **Siemens** Space" => select **OK**.
  - Insert the **CD** with the test patterns.
  - In **Explorer** => select **My Computer** => select **CD/DVD Laufwerk** => open **Moiree.bmp** with a double-click.

    The test pattern must open with "**Windows Picture and Fax Viewer**".
  - Drag the Windows Picture and Fax Viewer from the touch screen to the "Diagnostic Monitor".
  - Open the image by selecting "**maximize**", see Pos. 1.

    Open to the correct size by selecting "**Actual Size**", see Pos. 2.

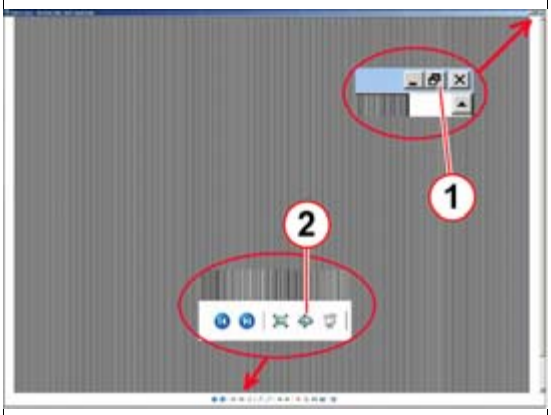


Fig. 45: Multix M Windows Picture and Fax Viewer

Pos. 1 "Maximize" button

Pos. 2 "Actual Size" button

Auto Adjust

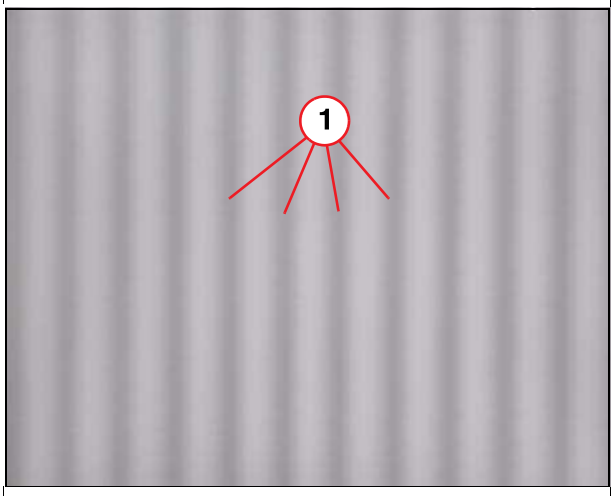
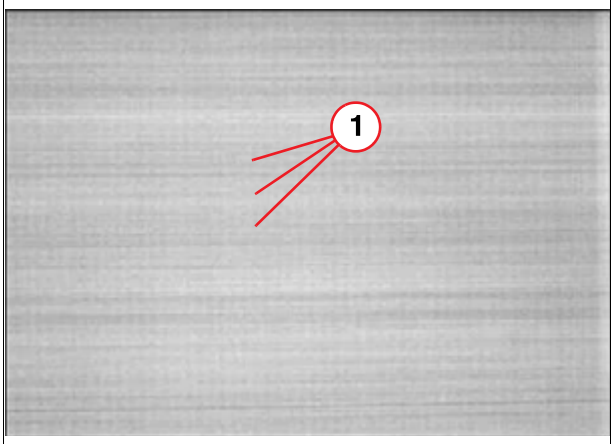
To set reliable initial values, an auto adjust is performed.

Auto-adjust:

1. Go back one step with **Set** (4) => select **Auto functions** (1) => **Open** (2)
2. Select **Auto Brightness** (1) => set to **Off** (2).
3. Select **Auto Position Phase Frequency** (1) => set to **On** (2).
4. Select **Execute select auto function** (1) => start with **Up** (2).

Frequency / Phase Adjustment

Tab. 14 Frequency / Phase Adjustment

• Frequency adjustment: - Open the **OSD menu** (1) => select **Others** (1) => **Open** (2) => select **Frequency/Phase** (1) => **Open** (2). - Adjust with Up (2) and Down (3) so that **no vertical bars** are visible, see illustration; to do this, test the entire adjustment range! The image must appear "homogeneous" (**without vertical bars/dark areas**). Horizontal disturbances (also strong) may not be visible!	 *Fig. 46: Frequency adjustment* Pos. 1 Vertical lines
• Select **Phase** (1) => - Adjust with Up and Down so that no horizontal disturbances are visible, see illustration; to do this, test the entire adjustment range! The image must appear "homogeneous" (**without horizontal disturbance lines**). If the disturbances in some exceptional cases cannot be completely corrected, set to the minimum. • Remove the CD from the drive.	 *Fig. 47: Phase adjustment* Pos. 1 Horizontal lines

Brightness / Contrast Adjustment:

Selecting the Test Pattern:

- Enter a **patient name**, e.g. **Monitor test**.

  Enter an **ID**, e.g. 1**23**.

  Enter the **Sex**, e.g. **Male**.

  Enter the **Date of Birth**, e.g. **11112000**.
- Confirm the window with the **OK** button.
- Select "**Test**" on the **control monitor**.
- Press the "**SMPTE**" button.
- Trigger an **exposure** when the system displays Ready.
- Select the **right arrow**.
- Press the "**Option**" button (1/Fig. 48 / p. 57).
- Select **Gamma Adjustment**.

  - Enter the password (99999)

  - Confirm with OK.

  - Set Magnify Image to 1.10.

  - Exit the window with OK.

  - Exit the Gamma Adjustment with OK.

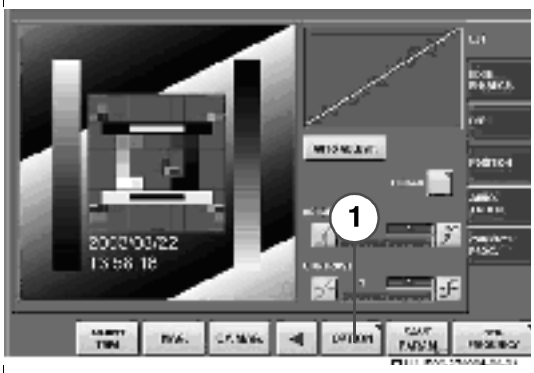


Fig. 48: Test Image
Pos. 1 Option Button

- Select **QA Mag.**, see Pos. 1.
- Select the zoom range with the mouse:

  1st click, see Pos. 2

  2nd click, see Pos. 3.
- Select **Zoom**, see Pos. 4.

  The selection range is displayed on the diagnostic monitor.
- Magnify the image on the diagnostic monitor with a double-click.

Fig. 49: Multix M SMPTE Test Pattern
Pos. 1 QA Zoom selection
Pos. 2 Left angle of the B/C test pattern
Pos. 3 Right angle of the B/C test pattern
Pos. 4 Zoom selection

Brightness / Contrast / Ambient Light Sensor Adjustment, Analog

- General:
  - For switch-on / configuration of the SMFit meter, see (Test and Auxiliary Equipment / p. 12).
  - The mouse pointer may not be inside the measurement field during the measurement!
- The OSD menu must be moved "up" so that it is not in the measurement field:

  Go up one step with **Set** (4) => select **Others** (1) => **Open** (2) => select **OSD Settings** (1) => **Open** (2) =>

  a) Select **Vertical Position** (1).

  b) Set to the left stop with **Down** (3) (the OSD menu is moved up).

- **Switch off the ambient light sensor (for the adjustment):**

  Press the **Set** button (skip to one level higher).

  => Select **ALS/DPMS Setting** with Menu.

  => Open ALS/DMPS Settings with Up.

  => Set the **Ambient light Sensor (ALS)** to **"Off"** with Up (Off is active when the dot is lighted).

- Brightness / Contrast Adjustment:
  a) Go back one step with **Set** (4) => select **Brightness/Contrast** (1) => **Open** (2) => select **Contrast** (1)
  b) Set to **maximum** with **Up** (2).
  c) Select **Backlight** (1).
  d) Using **Up** (2) and **Down** (3) in the 100% field, set **400 cd/m^2**, +/- 20cd/m^2.
  e) Select **Brightness** (1).
  f) Using **Up** (2) and **Down** (3) in the black field, set **0.8 cd/m^2**, +/- 0.2 cd/m^2 with Up/Down.
  IMPORTANT: The 5% field in the black area must still be visible!
  g) Select **Contrast** (1).
  h) Using **Up** (2) and **Down** (3), adjust so that the **95% field is just visible**.
  i) Check the value in the black field, readjust with Brightness if required.
  If it needed to be "readjusted", the backlight value must also be checked again, and if needed, adjusted.
  j) Final Check: All steps must be detectable in the test pattern. If not, repeat the adjustment.

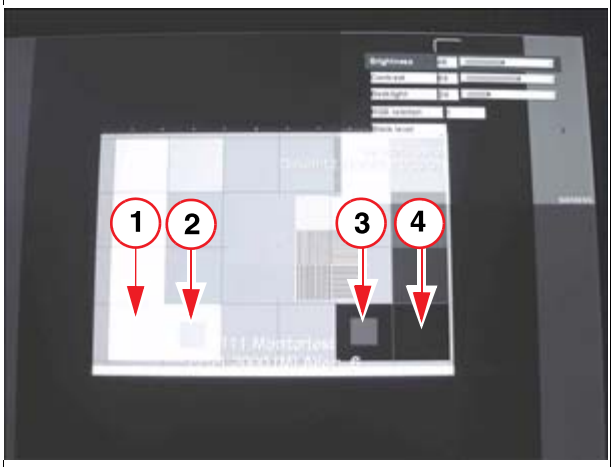


Fig. 50: B/C Test Pattern

Pos. 1	100% white measuring point
Pos. 2	95% white measuring point
Pos. 3	5% white measuring point
Pos. 4	0% white (black) measuring point

- Adjusting the ambient light sensor:
  - **Select Others (1) => Open (2) =>select ALS/DPMS settings (1) => Open (2).**
  - Select **Ambient light sensor (ALS)** (1) => set to **"On"** (2), On is active when the dot is lighted.
  - Select **ALS delay** (1) => adjust **to 1** using **Down** (3) (only for adjustment, quick control).
  - The slider for ALS sensitivity was adjusted at the factory to the optimum constant operation of the equipment and as a rule should not be changed in the field.
  - Completely cover the external light sensor (front frame, top left).

    Select ALS offset (1) => using Up (2) and Down (3), adjust to 400cd/m^2, +/-20cd/m^2 om tje 100% white field (see Pos 3).
  - Shine the flashlight directly on the sensor (front frame, top left). This corresponds to maximum brightness.

    Select ALS limit (1) => using Up (2) and Down (3), adjust to 550cd/m^2, +/-20cd/m^2 in the 100% white field (see Pos. 3).
  - **Select ALS delay (1) => using Up (2), set to 140** (fixed value for control delay).
  - Save the new adjustment values:

    Press the **Set** button (4) as often as needed until the "**Quit OSD**" menu appears.

    Select "**Accept changes**" (1).

    Select the "**Up button**" (2); the new values are saved and the OSD menu is exited.

- **The operating buttons must be blocked: Set (4) 1x and Up (2) 3x**.
- End of adjustment.

Adjustment with Digital Control

- General:
  - For switch-on / configuration of the SMFit meter, see (Test and Auxiliary Equipment / p. 12).
  - The mouse pointer may not be inside the measurement field during the measurement!
- The OSD menu must be moved "up" so that it is not in the measurement field:

  Go up one step with **Set (4)** => select **Others** (1) => **Open** (2) => select **OSD Settings** (1) => **Open** (2) => select **Vertical Position** (1) => set to the left stop with **Down** (3) (the OSD menu is moved up).
- **The ambient light sensor must be switched off for the AXIOM Multix M application:**

  Press the **Set** button (skip to one level higher).

  => Select **ALS/DPMS Setting** with Menu.

  => Open ALS/DMPS Settings with Up.

  => Set the **Ambient light Sensor (ALS)** to **"Off"** (white dot) with Up.

- **Switch off the ambient light sensor (for the adjustment):**

  Press the **Set** button (skip to one level higher).

  => Select **ALS/DPMS Setting** with Menu.

  => Open ALS/DMPS Settings with Up.

  => Set the **Ambient light Sensor (ALS)** to **"Off"** (white dot) with Up.

- Brightness / Contrast Adjustment:
  - Go back one step with **Set** (4).
  - Select **Brightness/Contrast** (1) => **Open** (2) => select **Backlight** (1)

    Caution: Contrast and Brightness are set to "50"; this value may not be changed!
  - Using **Up** (2) and **Down** (3) in the 100% white field (see Pos.3), set **400 cd/m**^{2} +/- 20cd/m^2.
  - Do not adjust; only a check!

    A value of 0.8, +0.15/-0.1 must result in the black field, see Pos. 4.

    If the tolerance values are not met, replace the monitor.
  - Final Check: All steps must be detectable in the test pattern.

    No further adjustments are required because of the digital control.

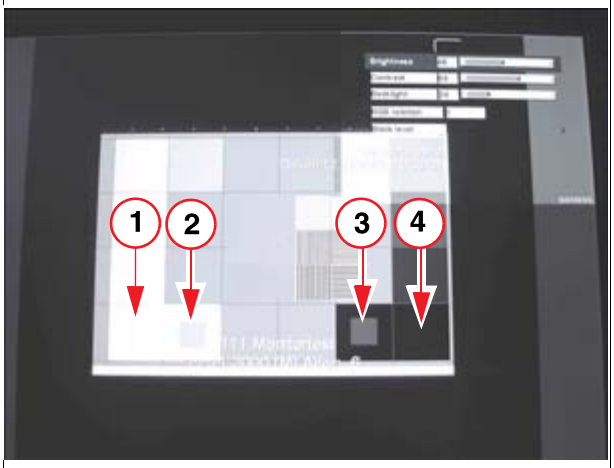


Fig. 51: B/C Test Pattern

Pos. 1	100% white measuring point
Pos. 2	95% white measuring point
Pos. 3	5% white measuring point
Pos. 4	0% white (black) measuring point

- Adjusting the ambient light sensor:
  - **Select Others (1) => Open (2) =>select ALS/DPMS settings (1) => Open (2).**
  - Select **Ambient light sensor (ALS)** (1) => set to **"On"** (2), On is active when the dot is lighted.
  - Select **ALS delay** (1) => adjust **to 1** using **Down** (3) (only for adjustment, quick control).
  - The slider for ALS sensitivity was adjusted at the factory to the optimum constant operation of the equipment and as a rule should not be changed in the field.
  - Completely cover the external light sensor (front frame, top left).

    Select ALS offset (1) => using Up (2) and Down (3), adjust to 400cd/m^2, +/-20cd/m^2 om tje 100% white field (see Pos 3).
  - Shine the flashlight directly on the sensor (front frame, top left). This corresponds to maximum brightness.

    Select ALS limit (1) => using Up (2) and Down (3), adjust to 550cd/m^2, +/-20cd/m^2 in the 100% white field (see Pos. 3).
  - **Select ALS delay (1) => using Up (2), set to 140** (fixed value for control delay).
  - Save the new adjustment values:

    Press the **Set** button (4) as often as needed until the "**Quit OSD**" menu appears.

    Select "**Accept changes**" (1).

    Select the "**Up button**" (2); the new values are saved and the OSD menu is exited.

- **The operating buttons must be blocked: Set (4) 1x and Up (2) 3x.**
- End of adjustment.

Appendix

Configuration List:

AXIOM .../ Axis.....

Configuration when shipped:

OSD Menu		Settings Artis VC12 xx or higher	Settings AXIOM Luminos dRF	Settings AXIOM Multix M
Brightness / Contrast		With digital control: brightness and contrast are factory set (set to 50). Do not change! Backlight => Checked / adjusted in the instructions.		
Source		No configuration when shipped; selection takes place automatically.		
Auto functions		No configuration when shipped; auto adjustment.		
Language		**English**		
Others =>	Sharpness	No configuration when shipped. (no effect on AX applications; has an effect only with analog control and timings outside of 1280x1024).		
	OSD/LED Settings	Horizontal Position = **Slider, right stop** Vertical Position = **Slider, right stop** Background = **Translucent** LED (brightness of the mode display LED) = **Dimmed**		
	ALS/DPMS Settings	Ambient light sensor (ALS) = **On** ALS delay = **140** ALS sensitivity = **factory set** (constant) ALS offset = adjusted in the instructions. ALS limit = adjusted in the instructions. DPMS = **On** DPMS Off Mode (Backlight) = **Off**.		
	Status	No configuration when shipped. Display of the current temperature, working hours, video mode, firmware		

OSD Menu		Settings Artis VC12 xx or higher	Settings AXIOM Luminos dRF	Settings AXIOM Multix M
Service Level 2	Calibration	Temperature; Backlight command; Backlight sensor info; Backlight (controlled) => display only. ALS calibrate => factory set. Backlight control => On		
	User settings	No configuration. • Reset user settings = reset to settings when shipped: • Custom settings number = the standard currently being used is saved under number "x". • Save custom settings = the standard currently being used is saved as a "default standard". • Reset custom settings = Reset to the custom settings.		
	Test and Reset	• Test Pattern = Off (On, internal test pattern is displayed). • Reset to factory defaults = Reset to the original values; do not perform!! If so, then the configuration must be performed manually. • Restart = Monitor performs a restart.		
	LUT	Backlight command LUT = **Off** Select display function = **2**		
	Tolerance	Norm group = **PAL Video** Switch loop = **1** Tolerance factor = **1** DVI-D Equalization = **13** DVI-D PLL Bandwidth = **4MHz** Backlight regulation amplifier = **factory set.**		
		Emergency mode, analog: 1. Live A monitor, examination room (only this one!): => **Active** 2. All other monitors: **=> Inactive**	Emergency mode, analog: => **Inactive**	Emergency mode, analog: => **Inactive**

<table>
<tr><th colspan="2">OSD Menu</th><th>Settings
Artis VC12 xx
or higher</th><th>Settings
AXIOM Luminos dRF</th><th>Settings
AXIOM Multix M</th></tr>
<tr><td rowspan="5">Service Level 2</td><td rowspan="2">Tolerance</td><td>RGB Priority Mode *1

Without the
"Voice Control" option, all:
=> Inactive

With the
"Voice Control" option:
Only the Ref. A monitor in the examination room
=> Active *2
All monitors, except
Ref. A monitor in the examination room
=> Inactive</td><td>RGB Priority Mode *1
=> Inactive</td><td>RGB Priority Mode *1
=> Inactive</td></tr>
<tr><td colspan="3">Correction of “Fill all” timings = Active</td></tr>
<tr><td rowspan="3">Others</td><td colspan="3">Info = Off</td></tr>
<tr><td>Signal:
=> Monochrome</td><td>Signal:
=> RGB</td><td>Signal:
=> Monochrome</td></tr>
<tr><td colspan="3">Serial interface => On
Serial bus => disabled
Bus address => 1</td></tr>
<tr><td>Tempera-ture</td><td colspan="3">Temperature Limit = 60°C
Shutdown Temperature = 70°C</td></tr>
</table>

*1 => the RGB priority mode is integrated into the monitor beginning with SW 1.02.

*2 => configuration must be performed according to the data in the Adjustment chapter!

Cleaning:

NOTE

- **Remove any water droplets that appear immediately; longer contact will lead to discoloring of the finish.**
- **If the panel front is dirty, clean with a microfiber cloth and, if necessary, with one of the following listed cleaning agents.**
- **The entire monitor may be disinfected only with the tested disinfectants!**

Active ingredient class	Tested cleaning agents and disinfectants	Examples
Alcohol	Ethyl alcohol, 96%	Hospiset cloth Microcide liquid
Aldehyde	Melsitt Cidex	Aldasan 2000 Kohsolin Gigasept FF
Chlorine derivate	Terralin	Quartamon Med
Disinfectants	Taski DS5001 (Diverseylever Labs) Morning Mist Surfanios Fraicheur Citron (Anios Labs)	
Guanidine derivate	Lysoformin	
Quarternary compounds	Incidur spray, full strength	
Commercially available dish-washing liquids	Tempo	Fairy Ultra, Pril, Palmolive
Gasoline	Petroleum ether	
Prydine derivate	Spray Activ, full strength	
Water	Tap water Distilled water	

Cleaning Agents and Disinfectants that are not allowed:

Active ingredient class	Tested cleaning agents and disinfectants
Peroxide compounds	Perform Dismozon, pure

ARCADIS Systems

NOTE

- **The TFT monitor has been switched on for 20 minutes before the beginning the adjustments!**
- **All adjustments must be performed at the "original" installation location (e.g., monitor trolley).**

Checking Brightness and Contrast with the SMfit Spotmeter

NOTE

To check an already set and adjusted monitor (e.g. while performing maintenance work), the light-emitting diodes (LEDs) have to be measured in the 0% and 100% field of the SMPTE test image and compared with the target values.

In addition, the 5% and 95% fields have to be visible in the SMPTE test image.

When replacing the monitor, settings and adjustments have to be performed in accordance to the instructions in this chapter.

Displaying the SMPT Test Image on the Monitor

- Open and log into the local service in the ARCADIS Imaging System.
  ➪ The "Service Patient" is visible in the patient browser.

- Open the SMPTE test image under "Service Patient" in the patient browser.

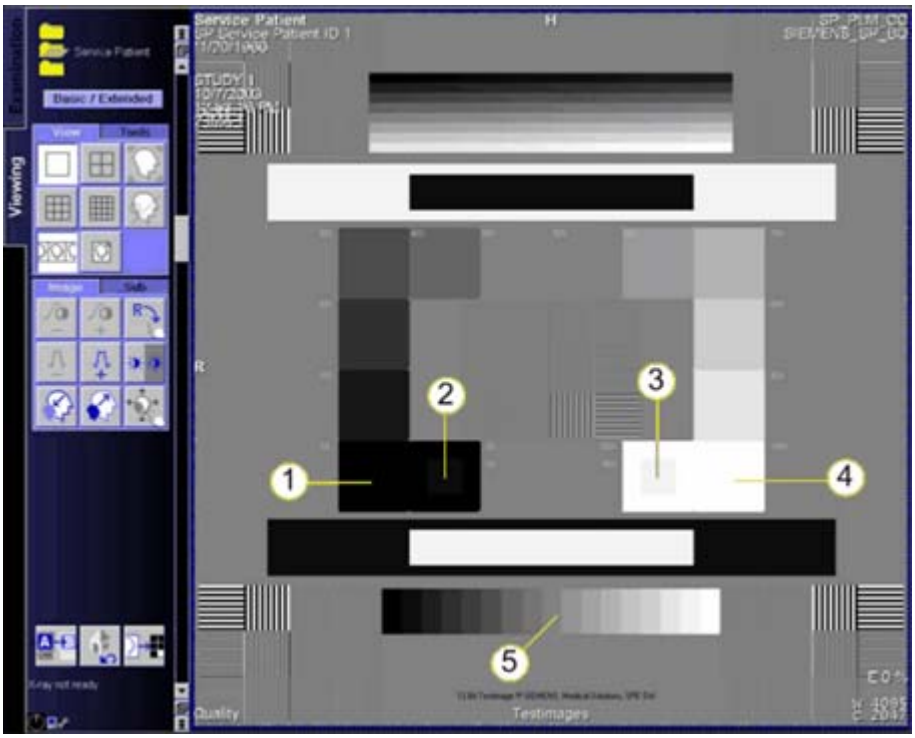


Fig. 52: SMPTE

Pos. 1	0% Field
Pos. 2	5% Field
Pos. 3	95% Field
Pos. 4	100% Field
Pos. 5	Gray levels

Checking Brightness/Contrast with the SMfit Spotmeter

- In the 0% field, (1/Fig. 52 / p. 70) < 1 cd/m^2 must be measurable.
- In the 100% field, (4/Fig. 52 / p. 70) 400, +/-20 cd/m^2 must be measurable.
- The 5% field (2/Fig. 52 / p. 70) and the 95% field (3/Fig. 52 / p. 70) must be visible.
  - ➪ If the values are not reached, an adjustment must be made.

Replacement

NOTE	**In any malfunction situation, only the complete monitor is replaced.**

- Connect the monitor using the VGA or DVI cable and the power cable (2/Fig. 53 / p. 71).

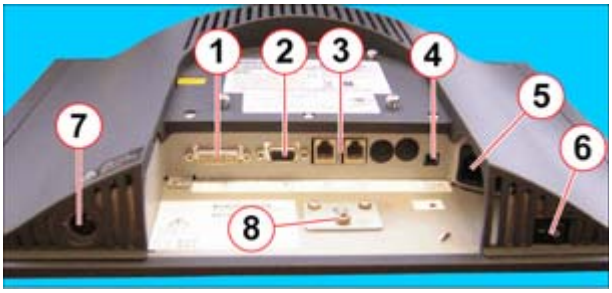


Fig. 53: Connection panel DSB 19..

Pos. 1 DVI-I Input
Pos. 2 VGA Input (D-Sub).
Pos. 3 RS232 (service only)
Pos. 4 5V/1A output
Pos. 5 Power connector
Pos. 6 Power switch
Pos. 7 Used only with SMFit ACT (currently not used on AX / SP systems)
Pos. 8 Ground connection

Settings

NOTE

The monitor is factory delivered with default settings for the AX Systems. The following settings or adjustments must be performed.

NOTE

All settings are performed in the On Screen Display (OSD).

Settings in the OSD menu

NOTE

The OSD menu can also be selected without a video signal.

Normally, the monitor automatically recognizes the correct DVI digital / DVI analog or VGA signal input.

- For the operating buttons, see the illustration; button numbering (1-4) can be found again in the adjustment.
- Pressing the Set button (4) generally switches to one level higher or back.
- Enable/block the OSD menu:

  There must be no OSD display visible; then press the following button combination: 1x Set (4) and 3x Up (2), with a pause in between of approx. 1/2 sec.

  Open the OSD menu with Menu (1).
- For general operation, enabling / blocking, etc., see

  (General Remark Regarding Use of the OSD Menu / p. 14).

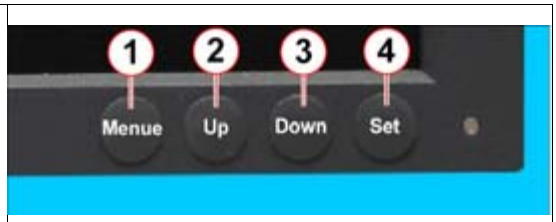


Fig. 54: DSB 19 ... Front buttons

Pos. 1	Menu button (number 1)
Pos. 2	UP button (number 2)
Pos. 3	Down button (number 3)
Pos. 4	Set button (number 4)

- Unlock the OSD menu . See Chapter (General Remark Regarding Use of the OSD Menu / p. 14).

Parameter signal input

NOTE

For the existing ARCADIS System (Gen2) without the "Videosplitter" option, the "DVI Digital" input has to be programmed (DVI cable connected to the PC and monitor).

For the existing ARCADIS System (Gen2) with installed "Videosplitter," the "DVI Analog" input has to be set (DVI cable connected to the monitor, however, the VGA-DVI adapter has to be connected to the videosplitter = analog video signal via the DVI cable).

For the existing ARCADIS System (Gen2) with 15-pin VGA cable connector between PC and monitor, the "VGA" input has to be set.

- If the ASPIA image signal is not visible with a connected TFT display, select the correct input (VGA, DVI digital or DVI analog):
  - ➪ Open the OSD menu, select "Source" with **Menu** button (1) and press button (2) **Select**.
  - ➪ Select “VGA”, “DVI Digital” or “DVI Analog” with **Menu** button (1) and press button (2) **Select**.
  - ➪ Using button (4) **Upper Menu**, go back until the **Quit OSD** menu is displayed.
  - ➪ Select the “Accept Changes” menu by pressing **Menu** button (1).
  - ➪ Press button (2) **Select**. The setting is accepted.

"ALS/DPMS Settings" Parameter

- Open the OSD menu. Press button (4) **SET** once and button (2) **UP** 3 times in a row.
  ➪ The OSD menu is opened and visible.
- Select the menu item "Others" using the **Menu** button (1) and press button (2) **Select**.
- Select the menu item "ALS/DPMS settings" using the **Menu** button (1) and press button (2) **Select**.
- Using button (1) **UP**, activate the "Off button (lighted dot = active).

Settings in the submenu “Service Level 2”

NOTE	**The settings have to be checked and, if necessary, adjusted.** **The parameters are set in Service Level 2.**

Activate Service Level 2

- Activate Service Level 2 To do so, select the menu “Service Level 2” using the **Menu** button (1). Then press the **UP** button (2) once and the **Down** button (3) quickly two times in a row.
  ➪ This activates the "Service Level 2" submenu.

"LUT Backlight command" Parameter

- Select the menu item "LUT" using **Menu** button (1) and press button (2) **Select**.
- Select the menu item "LUT Backlight command" using **Menu** button (1) and use button (2) **UP** to set the value to“Off”.
- Press button (4) **Upper Menu** to go back to the previous menu.

"Select display function" Parameter

- Select the menu item "Select display function" using **Menu** button (1) and press button (2) **UP** to set the value to “3”.
- Press button (4) **Upper Menu** to go back to the previous menu.

"Signal" Parameter

- Select the menu item "Others" using the **Menu** button (1) and press button (2) **Select**.
- Select the menu item "Signal" using **Menu** button (1) and press button (2) **UP** to set the value to “RGB”.
- Using button (4) **Upper Menu**, press 4 times until the **Quit OSD** menu is displayed.
- Select the menu item "Accept changes..." using **Menu** button (1) and press button (2) **Select** to store the changed setting.

Adjustments

NOTE	**The ambient light sensor is always deactivated!**

Image size and position

NOTE	**Only perform with analog input signal (input signal to DVI analog or VGA)**

Select HTML test image

NOTE	**The image size and position adjustments described below (Auto Position Phase Frequency) must be performed using the HTML test image.**

Open local service.

- Open the <Utilities> menu.
- Select "System" in the <Source> list field.
- Select <Shutdown Application>.
- The message “Application Shutdown was selected. Confirm "Are you sure?” by clicking the <OK> button.
  - ➪ The Syngo application is ended.
- Wait until the message "Shutdown of Application finished" appears in the service browser window.
- Start Explorer. To do so, select from the Windows menu <Start> - <Programs> - <Accessories> and click on the <Windows Explorer> icon.
  - ➪ Windows Explorer opens.
- Open the following path in the Windows Explorer: <My Computer> - <Med_System (C:)> - <Test Images>.
- Open the HTML page “Main.htm”by double-clicking.
  - ➪ The main page of the HTML test images is displayed in Internet Explorer.
  - ➪ On the left page, the selectable HTML test images are listed as HTML links.
  - ➪ By clicking the HTML links, the respective test image is displayed in the browser window.
- Display the SMPTE test image “ASPIA Test image.”
- With the mouse, situate the Internet Explorer window on the monitor to be adjusted and display as full screen image.

Adjusting the image size and position

- Select the OSD menu by pressing **Menu** button (1).

- Select the menu group **Auto functions** using the **Menu** button (1) and open it with the **Up** button (2).

NOTE	**For "Auto Position Phase Frequency", a lighted dot means the radio button is when selected..**

- Select **Auto Position Phase Frequency** using the **Menu** button (1) and select the "**On**" radio button (lighted dot = active) **Up** button (2).
- Select **Execute select auto function** using the **Menu** button (1). Start the automatic adjustment of image size and position using the **Up** button (2).
  - ➪ The image frequency and resolution are automatically adjusted.
- Wait until the menu is hidden.
  - ➪ In the test image, no or very few interference strips should be visible.
  - ➪ The white edge and the contours of the lettering on the monitor have to be visible on all pages.

Manually adjusting the image size and position

NOTE	**Only perform with analog input signal (input signal to DVI analog or VGA)**

NOTE	**Only perform if the image is not correctly reproduced after performing and completing the function "Auto Position Phase Frequency".** **The image size and position then have to be set manually.**

The values of the frequency, phase, H-position and V-position have to be set such that no or only minimal strip shapes are visible in the test image. In doing so, make sure the white edge and the contours of the lettering on the monitor are visible on all pages.

- Open the OSD menu (button (1)).
- Select the "Size/position" menu by pressing the **Menu** button (1) and press button (2) **Select**.
- Select the H-size, V-size, H-position and V-position and set accordingly.
- Press the **Set** button (4) until the **Quit OSD** menu appears.
  - ➪ The **Accept changes** menu item is automatically selected.
- Confirm the prompt**Accept changes** using the **Up** button (2).
  - ➪ The parameters set are saved and the OSD menu is exited.

Brightness/Contrast/Backlight with digital input signal (DVI digital)

NOTE	**To set the brightness/contrast and backlight, use the Syngo "Service Patient" SMPTE test image.**

Display the Syngo "Service Patient" SMPT test image on the monitor

NOTE	**The test image can be copied to the right-hand monitor using the "A to B" button.**

Open local service and log in.

➪ The "Service Patient" is visible in the patient browser.

- Open the SMPTE test image under "Service Patient" in the patient browser.

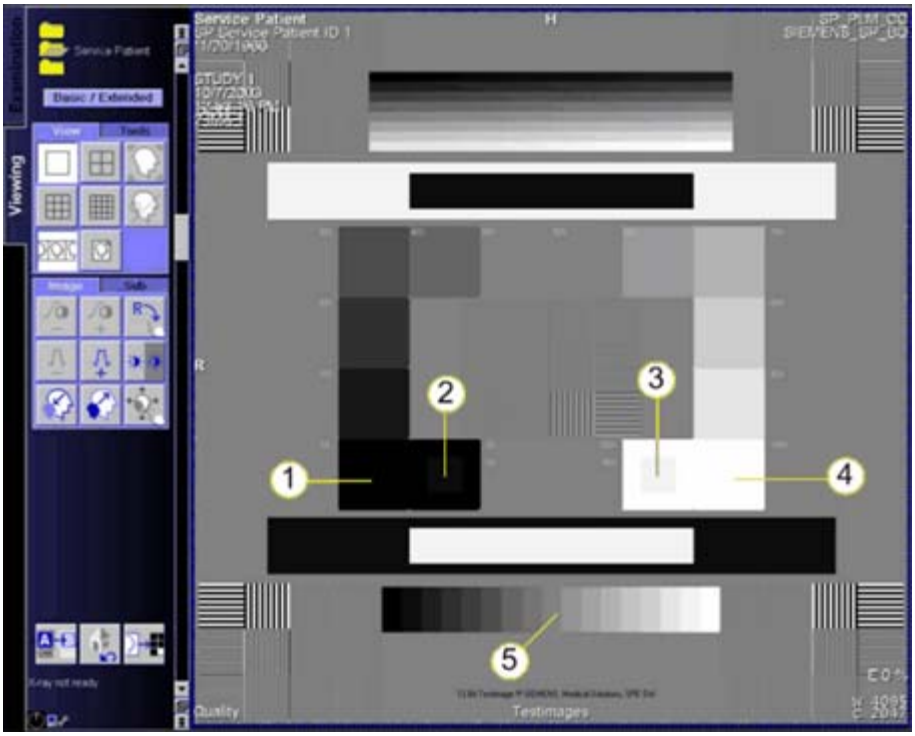


Fig. 55: SMPTE

Pos. 1	0% Field
Pos. 2	5% Field
Pos. 3	95% Field
Pos. 4	100% Field
Pos. 5	Gray levels

Settings for digital input signal

- Using the **Menu** button (1), select **Brightness/Contrast** and press the **Up** button (2).
- Using **Menu** button (1), select the **Backlight** menu item.
- Adjust the LEDs in the 100% field of the SMPTE test image (4/Fig. 55 / p. 76) using the **Up** and **DOWN** button to **400 +20/-20 cd/m^2**.

  ➪ The LED in the 100% field must be (4/Fig. 55 / p. 76) 400 +/-20 cd/m^2. The LED in the 0% field must be (1/Fig. 55 / p. 76) <1 cd/m^2. The 5% (2/Fig. 55 / p. 76) and 95% (3/Fig. 55 / p. 76) fields in the SMPTE test image must be visible.

- Check whether the LED in the 0% field (1/Fig. 55 / p. 76) **< 1 cd/m**^{2} is achieved.
  - ➪ If necessary, use the **Menu** button (1) to select the **Brightness** menu item and set the LED in the 0% field of the SMPTE test image using the **Up**- (2) / **Down**- (3) button to **< 1 cd/m**^{2}. When doing so, adjust the (brightness) setting downwards until the LED in the 0% field of the SMPTE test image no longer changes. Then adjust upwards again until the first clear change in the LED in the 0% field of the SMPTE test image occurs. Change again to one level lower. The 5% field of the SMPTE test image must be visible.
- Check whether the maximum LED in the 100% field (4/Fig. 55 / p. 76) is achieved,
  - ➪ If necessary, use the **Menu** button (1) to select the **Contrast** menu item and set the “Contrast” using the **Up**- (2) / **Down**- (3) button. When doing so, increase the (contrast) setting until the LED in the 100% field of the SMPTE test image no longer changes. Then lower until the first clear reduction in the LED in the 100% field occurs. Change again to one level higher. The maximum LED in the 100% field must be 400 +20/-20 cd/m^2. The 95% field (3/Fig. 55 / p. 76) must be visible in the test image.

NOTE	**If necessary, repeat the backlight, brightness, and contrast settings again.**

- Press the **Set** button (4) until the **Quit OSD** menu appears.
  - ➪ The **Accept changes** menu item is automatically selected.
- Confirm the prompt**Accept changes** using the **Up** button (2).
  - ➪ The parameters set are saved and the OSD menu is exited.
  - ➪ Re-check the brightness in the 0% and 100% fields and repeat the setting, if needed.
- Lock the OSD menu (Tab. 5 / p. 16).

Brightness/Contrast/Backlight with analog input signal (DVI analog / VGA))

NOTE	**To adjust the brightness/contrast and backlight, use the Syngo "Service Patient" SMPTE test image.**

Display the Syngo "Service Patient" SMPT test image on the monitor

NOTE	**The test image can be copied to the right-hand monitor using the "A to B" button.**

Open the "Service Menu" and log in.

- ➪ The "Service Patient" is visible in the patient browser.

- Open the SMPTE test image under "Service Patient" in the patient browser.

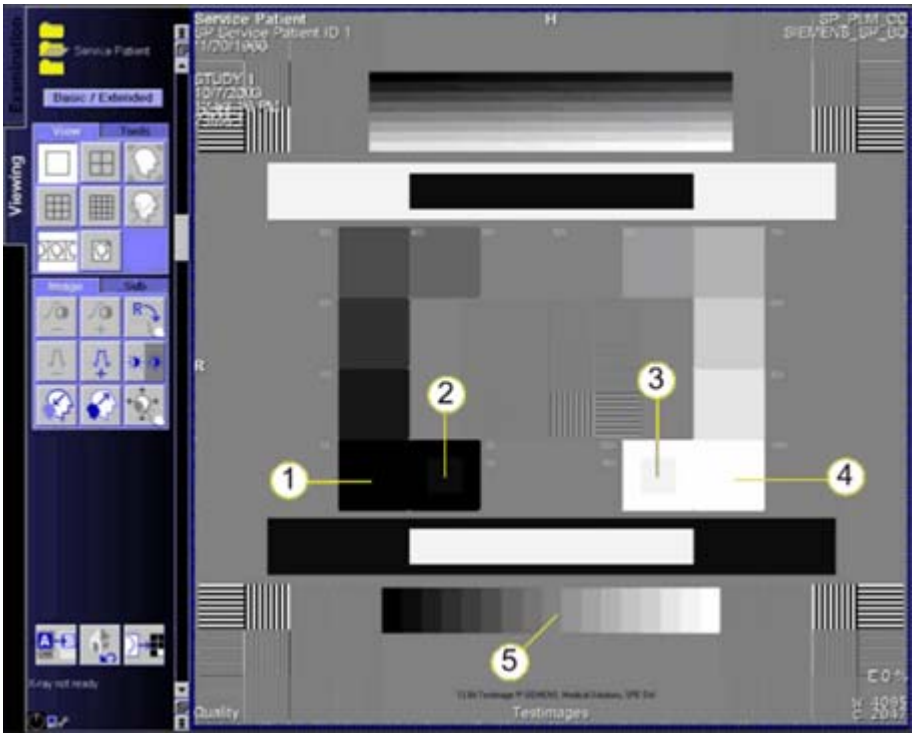


Fig. 56: SMPTE

Pos. 1	0% Field
Pos. 2	5% Field
Pos. 3	95% Field
Pos. 4	100% Field
Pos. 5	Gray levels

Settings for an analog input signal

- Using the **Menu** button (1), select **Brightness/Contrast** and press the **Up** button (2).
- Using the **Menu** button (1), select the **Brightness** menu item.
- Adjust the LED in the 0% field (1/Fig. 56 / p. 78) using the **Up**- (2) / **Down**- (3) buttons **< 1 cd/m^2**. When doing so, adjust the (brightness) setting downwards until the LED in the 0% field of the SMPTE test image no longer changes. Then adjust upwards again until the first clear change in the LED in the 0% field of the SMPTE test image occurs. Change again to one level lower. The 5% field of the SMPTE test image must be visible.

  ➪ The LED in the 0% field must be (1/Fig. 56 / p. 78) <1 cd/m^2. The 5% field (2/Fig. 56 / p. 78) of the SMPTE test image must be visible.
- Using **Menu** button (1), select the **Contrast** menu item.
- Adjust the LED in the 100% field (4/Fig. 56 / p. 78) using the **Up**- (2) /**Down**- (3) buttons. When doing so, increase the (contrast) setting until the LED in the 100% field of the SMPTE test image no longer changes. Then lower until the first clear reduction in the LED in the 100% field occurs. Change again to one level higher.

  ➪ The 95% field (3/Fig. 56 / p. 78) must be visible in the test image.
- Using **Menu** button (1), select the **Backlight** menu item.

- Adjust the LEDs in the 100% field of the SMPTE test image (4/Fig. 56 / p. 78) using the **Up** and **DOWN** button to **400 +20/-20 cd/m^2**.
  - ➪ The LED in the 100% field must be 400 +/-20 cd/m^2. The LED in the 0% field must be <1 cd/m^2. The 5% and 95% fields of the SMPTE test image must be visible.

NOTE	**If necessary, repeat the backlight, brightness, and contrast settings again.**

- Press the **Set** button (4) until the **Quit OSD** menu appears.
  - ➪ The **Accept changes** menu item is automatically selected.
- Confirm the prompt **Accept changes** using the **Up** button (2).
  - ➪ The parameters set are saved and the OSD menu is exited.
  - ➪ Re-check the brightness in the 0% and 100% fields and repeat the adjustments, if needed.
- Lock the OSD menu (Tab. 5 / p. 16).

UROSKOP Access

Replacement

- Connect the monitor using a VGA/VGA cable (2/Fig. 57 / p. 80).

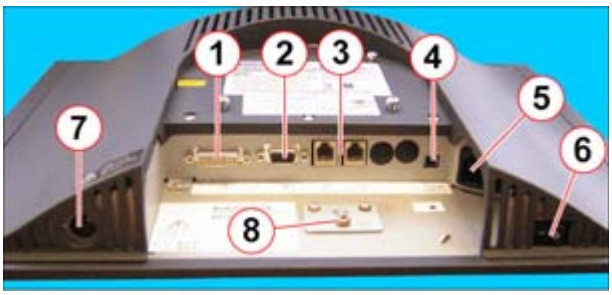


Fig. 57: Connection panel DSB 19..

Pos. 1	DVI-I Input
Pos. 2	VGA Input (D-Sub).
Pos. 3	RS232 (service only)
Pos. 4	5V/1A output
Pos. 5	Power connector
Pos. 6	Power switch
Pos. 7	Used only with SMFit ACT (currently not used on AX / SP systems)
Pos. 8	Ground connection

Displaying the “Testimage” Test Pattern on the Monitor

- Open the FLC service menu.
- Select the **Explorer** radio button.
- Select the “Main.htm“ file in the “C:\CS_Info“ directory with a double-click.
  - ➪ The following screen view is displayed (Fig. 58 / p. 81).
- Confirm the “Information Bar“ window with **OK**.

NOTE

If the “C:\CS_Info” directory does not exist, copy the HTML test patterns from the “UROSKOP Access System SW” CD onto the image system PC as described below.

- Place the “UROSKOP Access System SW” CD (shipped with every system) in the DVD drive of the image system PC.
- Open the FLC service menu.
- In the FLC service menu, select **System** and then **System Settings**.
- Select the **Parameter Update** radio button and wait until the “UROSKOP ACCESS SYSTEM SW CD...” window appears.
  - ➪ The HTML test patterns are now in the “C:\CS_Info“ directory.

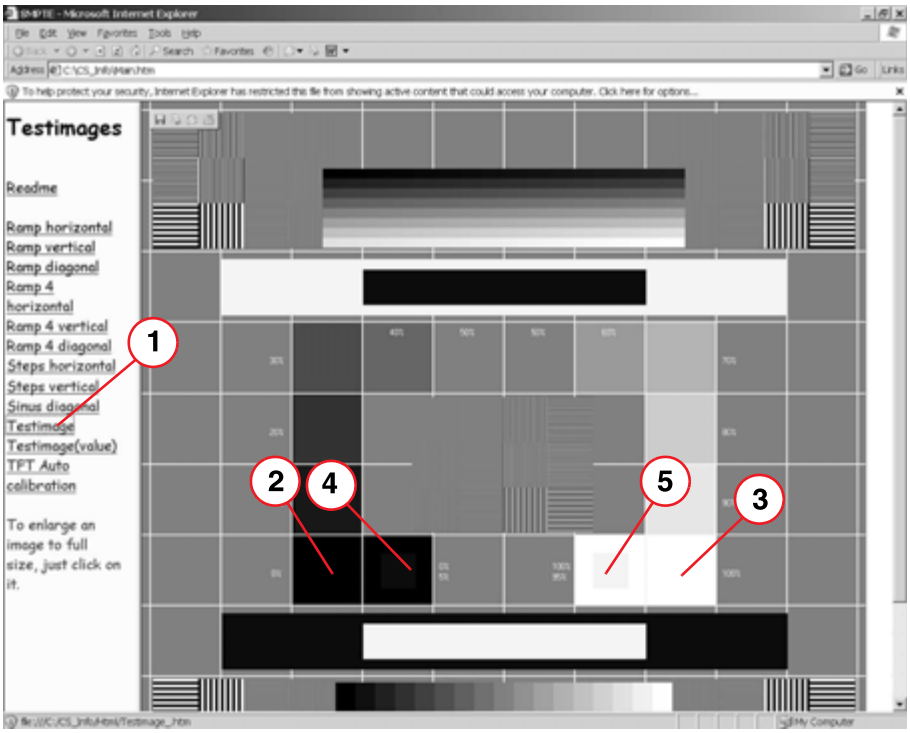


Fig. 58: Test image "Testimage"

Pos. 1 Test image "Testimage"

Pos. 2 0% field

Pos. 3 100% field

Pos. 4 5% field

Pos. 5 95% field

- On the left-hand side of the screen, select **Test image** (1/Fig. 58 / p. 81).

NOTE

The size of the test image can be increased and decreased with the F11 function key, and maximized with the left-hand mouse button.

If necessary, you can drag the test pattern to the Reference monitor with the mouse.

Adjustment

Replacement and adjustment of this monitor is described in this document. A separate document is not available.

The DSB 1906-DC monitor is used as a table unit on the UROSKOP Access in the control room.

NOTE

The service laptop is not required for adjustment of the monitor. All adjustments are made in the On Screen Display (OSD).

In any malfunction situation, only the complete monitor is replaced.

NOTE

The ambient light sensor is always deactivated (factory setting)!

- Load the “Testimage” test pattern as described in the subchapter (Displaying the “Testimage” Test Pattern on the Monitor / p. 80).
- If applicable, unblock the OSD menu (Tab. 5 / p. 16).

Selecting the LUT

- Using the **Menu**, select the **Servicelevel 2** menu followed by the **LUT** submenu.
- In the **LUT** menu, select the **Lut Backlight command** menu item and switch “Off” using the **Up**.
- In the **LUT** menu, select the **Select display function** menu item and switch off “3”.
- Keep pressing the **Set** button until the **Quit OSD** menu appears.
  - ➪ The **Accept changes** menu item is automatically selected.
- Confirm this selection with the **Up** key.
  - ➪ The parameters that are set are saved and the OSD menu is exited.

Size / Position

- Select the OSD menu with the **Menu** button.
- Select the **Auto functions** menu group with the **Menu** button and open it with the **Up** button.
- Select **Auto Brightness Contrast** and switch off the “Off” radio button.

NOTE

For “Auto Brightness Contrast” and “Auto Position Phase Frequency”, a lighted dot means selection of the radio button.

- Select **Auto Position Phase Frequency** and switch off the “On” radio button.
- Select **Execute select auto function** and start the automatic adjustment of image size and position using the **Up** button.

Deactivating the Ambient Light Sensor

NOTE

Factory setting; however if there is a situation in which the surrounding area at the customer's location is darkened and the ambient light sensor must be activated, proceeding as described in the subchapter (Adjusting the Ambient Light Sensor / p. 83) is recommended!

- Check whether the ambient light sensor is deactivated as described below:
  - Select the OSD menu with the **Menu** button (1/Fig. 6 / p. 14).
  - Select the **Others** menu group using the **Menu** button and press the **Up** button (2/Fig. 6 / p. 14) 1 x.
  - Select the **ALS/DPMS ALS/DPMS** menu item with the **Menu** button and press the **Up** button 1x.
  - Use the **Menu** button to select the **ALS offset** menu item and "8" with the **Up** or **Down** button.
  - Select the **Ambient light sensor (ALS)** menu item with the **Menu** button and deactivate it by selecting the **Up** button “Off“.
- Go back 2 steps in the menu with the **Set** button (4/Fig. 6 / p. 14).

Adjusting the Ambient Light Sensor

NOTE

If there is a situation in which the surrounding area at the customer's location is darkened, the ambient light sensor must be activated as described below is recommended!

- Select the OSD menu with the **Menu** button (1/Fig. 6 / p. 14).
- Select the **Others** menu group using the **Menu** button and press the **Up** button (2/Fig. 6 / p. 14) 1 x.
- Select the **Ambient light sensor (ALS)** menu item with the **Menu** button and deactivate it by selecting the **Up** button “On“.
- Use the **Menu** button to select the **ALS delay** menu item and select "1" with the **Down** button.

  ➪ This setting is used only for adjustment and is adapted again later.

NOTE

The “ALS sensitivity” menu item was adjusted at the factory to the optimum constant operation of the equipment and should not be changed in the field!

- Completely cover the ambient light sensor at the top left of the front frame.
- Select the **ALS offset** menu item with the **Menu** button and change the adjustment value with the **Up** or **Down** button until (3/Fig. 58 / p. 81) **280 ± 30 cd/m^2** is set in the 100% field of the test pattern.
- Directly shine the flashlight onto the sensor.

  ➪ This corresponds to maximum brightness.

- Select the **ALS limit** menu item with the **Menu** button and change the adjustment value with the **Up** or **Down** button until (3/Fig. 58 / p. 81) **550 ± 20 cd/m^2** is set in the 100% field of the test pattern.
- Use the **Menu** button to select the **ALS delay** menu item and select "140" with the **Up** button.
  - ➪ This is the fixed value for the control delay.
- Keep pressing the **Set** button until the **Quit OSD** menu appears.
  - ➪ The **Accept changes** menu item is automatically selected.
- Confirm this selection with the **Up** key.
  - ➪ The parameters that are set are saved and the OSD menu is exited.

Brightness/Contrast/Backlight

- Use the **Menu** button to select **Brightness/Contrast** and press the **Up** button 1x.
  - ➪ The **Brightness** menu item is automatically selected.
- Use the slider for **Brightness** (Up or the Down button) to adjust the black value in the 0% field to **0,8 + 0,4 / - 0,2 cd/m^2** .
  - ➪ All gray steps at the bottom edge of the test pattern must be perceptible and distinguishable.
- Use the **Menu** button to select **Contrast** menu item.
- Increase the contrast (Contrast) to the maximum and then reduce the contrast until the 95% field (5/Fig. 58 / p. 81) in the test pattern is again just visible.

NOTE	**Take note that the 5% field in the test pattern (4/Fig. 58 / p. 81) must be perceptible!**

- Select the **Backlight** menu item and set **400 + 10 / - 30 cd/m^2** with this parameter in the 100% field.
- Keep pressing the **Set** button until the **Quit OSD** menu appears.
  - ➪ The **Accept changes** menu item is automatically selected.
- Confirm this selection with the **Up** key.
  - ➪ The parameters that are set are saved and the OSD menu is exited.
- Lock the OSD menu again (Tab. 5 / p. 16).

Configuration List

OSD Menu		Settings UROSKOP Access
Brightness/Contrast		Brightness: **0,8 + 0,4 / - 0,2 cd/m^2**; Contrast: Adjustment per the instructions; backlight: **400 + 10 / - 30 cd/m^2**
Source		No configuration when shipped; selection is automatic.
Auto functions		No configuration when shipped; auto-adjustment.
Language		**English**
Others	Sharpness	n.a.
	OSD/LED settings	n.a.
	ALS/DPMS settings	Ambient light sensor (ALS) = **Off** ALS offset = **8** (if the ambient light sensor is activated; adjustment values per the subchapter (Adjusting the Ambient Light Sensor / p. 83))
	Status	No configuration when shipped. Displace of the current Temperatur, Working hours, Video Mode, Firmware
Serivcelevel 2	Calibration	Temperature; Backlight command; Backlight sensor info; Backlight (regulated) = display only. ALS calibrate = factory adjusted.
	User settings	No configuration. • Reset User settings = reset to the settings when shipped. • Custom settings number = the norm currently being used is saved under number "x". • Save custom settings = the currently applied norm is saved as the “default norm”. • Reset custom settings = reset of the custom settings.

OSD Menu		Settings UROSKOP Access
Service-level 2	Test and Reset	• Test Pattern = **Off** (On: internal test pattern is displayed.) • Reset to factory defaults = reset to original values; do not perform! If so, the configuration must be performed manually. • Restart = monitor performs a restart.
	LUT	Lut Backlight command = **Off** Select display function = **3**
	Tolerance	n.a.
	Others	n.a.
	Tempera-ture	n.a.

Chapter	Section	Changes
Chap. 5	ARCADIS Systems	Initial version.